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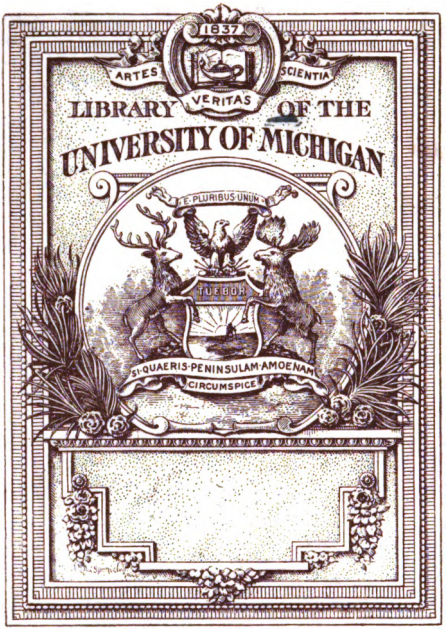

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UNIVERSITY OF CALCUTTA.

THE

CALENDAR

FOR THE YEAR

1907.

PART I.

CALCUTTA:

THACKER, SPINK & CO.,

Publishers of the University.

1907.

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CALCUTTA:—BAPTIST MISSION PRESS.

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I.

Calcutta University Calendar,

1907.

JANUARY.		
1	T	New Year's Day.
2	W	
3	Th	
4	F	
5	S	
6	S	
7	M	
8	T	
9	W	
10	Th	
11	F	
12	S	Meeting of the Syndicate.
13	S	
14	M	
15	T	
16	W	
17	Th	
18	F	Sripanchami.
19	S	
20	S	
21	M	Last day of application for Entrance Examination.
22	T	
23	W	University of Calcutta founded, 1857.
24	Th	
25	F	Id-uz-zuha.
26	S	Annual Meeting of the Senate.
27	S	
28	M	
29	T	
30	W	
31	Th	

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		FEBRUARY.
1	F	
2	S	
3	S	
4	M	Last day of application for F.A., B.A., and B.Sc. [illegible]
5	T	
6	W	
7	Th	
8	F	
9	S	[illegible]
10	S	
11	M	
12	T	
13	W	
14	Th	
15	F	
16	S	
17	S	
18	M	
19	T	
20	W	
21	Th	
22	F	Muharram.
23	S	Muharram.
24	S	
25	M	
26	T	
27	W	
28	Th	Doljatra.

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		MARCH.
1	F	Convocation for conferring Degrees.
2	S	
3	S	Entrance Examination begins.
4	M	Last day of application for Preliminary Scientific, First and Second M.B. Examinations.
5	T	
6	W	
7	Th	
8	F	Meeting of the Syndicate.
9	S	
10	S	
11	M	
12	T	
13	W	
14	Th	
15	F	
16	S	
17	S	
18	M	F.A., B.A., B.Sc., Preliminary Scientific, First and Second M.B. Examinations begin.
19	T	
20	W	
21	Th	
22	F	
23	S	
24	S	
25	M	
26	T	
27	W	
28	Th	
29	F	**Good Friday.**
30	S	**Easter Saturday.**
31	S	

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APRIL		
1	M	**Easter Monday.**
2	T	Last day of application for Preliminary Scientific, First and Second L.M.S. and F.E. Examinations.
3	W	
4	Th	
5	F	
6	S	
7	S	
8	M	
9	T	
10	W	
11	Th	
12	F	
13	S	**Chaitra Sankranti.**
14	S	
15	M	Preliminary Scientific, First and Second L.M.S. and F.E. Examinations begin.
16	T	
17	W	Meeting of the Syndicate.
18	Th	
19	F	
20	S	
21	S	
22	M	
23	T	
24	W	
25	Th	**Fatiha-Dowazdaham.**
26	F	
27	S	
28	S	
29	M	
30	T	

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MAY.		
1	W	
2	Th	
3	F	
4	S	
5	S	
6	M	
7	T	
8	W	
9	Th	
10	F	
11	S	Meeting of the Syndicate.
12	S	
13	M	
14	T	
15	W	
16	Th	
17	F	
18	S	
19	S	
20	M	
21	T	
22	W	
23	Th	
24	F	Last day of application for the Premchand Roychand Studentship Examination.
25	S	
26	S	
27	M	
28	T	
29	W	
30	Th	
31	F	

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JUNE.

1	S	
2	S	
3	M	
4	T	
5	W	
6	Th	
7	F	
8	S	
9	S	
10	M	
11	T	
12	W	
13	Th	
14	F	
15	S	Meeting of the Syndicate.
16	S	
17	M	
18	T	
19	W	
20	Th	
21	F	**Dasahara.**
22	S	
23	S	
24	M	Last day of application for L.E. and B.E. Examinations.
25	T	
26	W	
27	Th	
28	F	**King-Emperor's Birthday.**
29	S	
30	S	

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JULY.

1	M	
2	T	
3	W	
4	Th	
5	F	
6	S	
7	S	
8	M	L.E., and B.E. Examinations begin.
9	T	
10	W	
11	Th	
12	F	
13	S	Meeting of the Syndicate.
14	S	
15	M	
16	T	
17	W	University of Bombay founded, 1857.
18	Th	
19	F	
20	S	
21	S	
22	M	
23	T	
24	W	
25	Th	
26	F	
27	S	
28	S	
29	M	
30	T	
31	W	

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AUGUST		
1	Th	
2	F	
3	S	
4	S	
5	M	
6	T	
7	W	
8	Th	
9	F	
10	S	Meeting of the Syndicate.
11	S	
12	M	
13	T	
14	W	
15	Th	
16	F	
17	S	
18	S	
19	M	
20	T	
21	W	
22	Th	
23	F	
24	S	Last day of application for M.A. and M.L. Examinations.
25	S	
26	M	
27	T	
28	W	
29	Th	
30	F	**Janmashtami.**
31	S	

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SEPTEMBER		
1	S	
2	M	
3	T	
4	W	
5	Th	
6	F	
7	S	
8	S	
9	M	
10	T	
11	W	
12	Th	
13	F	
14	S	Meeting of the Syndicate.
15	S	
16	M	
17	T	
18	W	
19	Th	
20	F	
21	S	
22	S	
23	M	
24	T	
25	W	
26	Th	
27	F	
28	S	
29	S	
30	M	

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1	T	
2	W	
3	Th	
4	F	
5	S	
6		
7	M	Mahalaya.
8	T	
9	W	
10	Th	
11	F	Durga Puja holidays begin.
12	S	
13		
14	M	
15	T	
16	W	
17	Th	
18	F	
19	S	
20		
21	M	
22	T	
23	W	
24	Th	
25	F	
26	S	
27	S	
28	M	
29	T	
30	W	
31	Th	

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1	F	
2	S	
3		
4	M	
5	T	Kali Puja.
6	W	
7	Th	
8	F	
9	S	
10		
11	M	
12	T	
13	W	
14	Th	Jagadhatri Puja.
15	F	
16	S	
17		
18	M	
19	T	
20	W	
21	Th	
22	F	
23	S	
24		
25	M	
26	T	
27	W	
28	Th	
29	F	
30	S	

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DECEMBER		
1	S	
2	M	Premchand Roychand Studentship Examination begins.
3	T	
4	W	
5	Th	
6	F	
7	S	
8	S	
9	M	**Id-ul-fitr.**
10	T	
11	W	
12	Th	
13	F	
14	S	[illegible]
15	S	
16	M	
17	T	
18	W	
19	Th	
20	F	
21	S	
22	S	
23	M	
24	T	**Christmas holidays begin.**
25	W	
26	Th	
27	F	
28	S	
29	S	
30	M	
31	T	

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II.

ACTS OF INCORPORATION.

ACT No. II of 1857.

Passed on the 24th January, 1857.

As amended by Act VIII of 1904.

An Act to establish and incorporate an University at Calcutta.

Preamble.

WHEREAS, for the better encouragement of Her Majesty's subjects of all classes and denominations within the Presidency of Fort William in Bengal and other parts of India in the pursuit of a regular and liberal course of education, it has been determined to establish an University at Calcutta for the purpose of ascertaining, by means of examination, the persons who have acquired proficiency in different branches of Literature, Science, and Art, and of rewarding them by Academical Degrees as evidence of their respective attainments, and marks of honour proportioned thereunto; and whereas, for effectuating the purposes aforesaid, it is expedient that such University should be incorporated: It is enacted as follows (that is to say):—

Incorporation.

I. The following persons, namely,
The Right Honourable CHARLES JOHN VISCOUNT CANNING,
Governor-General of India.
The Honourable JOHN RUSSELL COLVIN,
Lieutenant-Governor of the North-Western Provinces.
The Honourable FREDERICK JAMES HALLIDAY,
Lieutenant-Governor of Bengal.
The Honourable SIR JAMES WILLIAM COLVILE, Knight,
Chief Justice of the Supreme Court of Judicature in Bengal.
The Right Reverend DANIEL WILSON, Doctor of Divinity,
Bishop of Calcutta.
The Honourable GEORGE ANSON, General,
Commander-in-Chief of the Forces in India.
The Honourable JOSEPH ALEXANDER DORIN,
Member of the Supreme Council of India.
The Honourable JOHN LOW, Major-General,

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Companion of the Most Honourable Order of the Bath,
Member of the Supreme Council of India.
The Honourable JOHN PETER GRANT,
Member of the Supreme Council of India.
The Honourable BARNES PEACOCK,
Member of the Supreme Council of India.
CHARLES ALLEN, Esquire,
Member of the Legislative Council of India.
HENRY RICKETTS, Esquire,
Provisional Member of the Supreme Council of India.
CHARLES BINNY TREVOR, Esquire,
Judge of the Sudder Court of India.
Prince GHOLAM MUHAMMAD.
WILLIAM RITCHIE, Advocate-General in Bengal.
CECIL BEADON, Esquire,
Secretary to the Government of India.
Colonel HENRY GOODWYN, of the Bengal Engineers,
Chief Engineer in Bengal.
WILLIAM GORDON YOUNG, Esquire,
Director of Public Instruction in Bengal.
Lieutenant-Colonel WILLIAM ERSKINE BAKER,
of the Bengal Engineers,
Secretary to the Government of India.
Lieutenant-Colonel ANDREW SCOTT WAUGH,
of the Bengal Engineers, Surveyor-General of India.
KENNETH MACKINNON, Esquire, Doctor in Medicine.
HODGSON PRATT, Esquire,
Inspector of Schools in Bengal.
HENRY WALKER, Esquire,
Professor of Anatomy and Physiology in the Medical
College of Bengal.
THOMAS THOMSON, Esquire, Doctor in Medicine,
Superintendent of the Botanical Garden at Calcutta.
FREDERICK JOHN MOUAT, Esquire, Doctor in Medicine,
and Fellow of the Royal College of Surgeons.
Lieutenant WILLIAM NASSAU LEES, of the Bengal Infantry.
The Reverend WILLIAM KAY, Doctor of Divinity,
Principal of Bishop's College.
The Reverend ALEXANDER DUFF, Doctor of Divinity.
THOMAS OLDHAM, Esquire,
Superintendent of the Geological Survey of India.
HENRY WOODROW, Esquire,
Inspector of Schools in Bengal.
LEONIDAS CLINT, Esquire,
Principal of the Presidency College.
PROSONNO COOMAR TAGORE,
Clerk Assistant of the Legislative Council of India.

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RAMAPERSHAD ROY,
Government Pleader in the Sudder Court of Bengal.
The Reverend JAMES OGILVIE, Master of Arts.
The Reverend JOSEPH MULLENS, Bachelor of Arts.
Moulavy MUHAMMAD WUJEEH,
Principal of the Calcutta Madrasah.
ISWAR CHANDRA BIDYASAGAR,
Principal of the Sanskrit College of Calcutta.
RAMGOPAL GHOSE,
Formerly Member of the Council of Education.
ALEXANDER GRANT, Esquire,
Apothecary to the East India Company.
HENRY STEWART REID, Esquire,

Director of Public Instruction in the North-Western Provinces, being the first Chancellor, Vice-Chancellor, and Fellows of the said University, and all the persons who may hereafter become, or be appointed to be Chancellor, Vice-Chancellor, or Fellows as hereinafter mentioned, so long as they shall continue to be such Chancellor, Vice-Chancellor, or Fellows, are hereby constituted and declared to be one Body Politic and Corporate by the name of the University of Calcutta; and such Body Politic shall by such name have perpetual succession, and shall have a common seal, and by such name shall sue and be sued, implead and be impleaded, and answer and be answered unto, in every Court of Justice within the territories in the possession and under the Government of the East India Company.

Power to hold and dispose of property.

II. The Body Corporate shall be able and capable in law to take, purchase, and hold any property, movable or immovable, which may become vested in it for the purpose of the University by virtue of any purchase, grant, testamentary disposition, or otherwise; and shall be able and capable in law to grant demise, alien, or otherwise dispose of, all or any of the property movable and immovable, belonging to the University; and also do all other matters incidental or appertaining to a Body Corporate.

Effect of retirement.

III. If any person being Chancellor, Vice-Chancellor, or Fellow of the said University shall leave India without the intention of returning thereto, his office shall thereupon become vacant.

Chancellor.

IV. The Governor-General of India for the time being shall be the Chancellor of the said University, and the first Chancellor shall be the Right Honourable Charles John Viscount Canning.

Vice-Chancellor.

V. The first Vice-Chancellor of the said University shall be Sir James William Colvile, Knight. The office of Vice-Chancellor shall be

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held or two years only; and the Vice-Chancellor hereinbefore nominated shall go out of office on the first day of January, 1859. Whenever a vacancy shall occur in the office of Vice-Chancellor of the said University by death, resignation, departure from India, effluxion of time, or otherwise, the Governor-General of India in Council shall by notification nominate a fit and proper person, being one of the Fellows of the said University, to be Vice-Chancellor in the room of the person occasioning such vacancy: Provided that on any vacancy in the said office, which shall occur by effluxion of time, the Governor-General of India in Council shall have power to re-appoint the Vice-Chancellor hereinbefore nominated or any future Vice-Chancellor to such office.

The appointment of a Fellow may be cancelled.

VII. The Governor-General of India in Council may cancel the appointment of any person already appointed or hereinafter to be appointed a Fellow of the University, and, as soon as such order is notified in the *Gazette*, the person so appointed shall cease to be a Fellow.

Chancellor, Vice-Chancellor, and Fellows to superintend the affairs of the University.

VIII. The Chancellor, Vice-Chancellor, and Fellows, for the time being, shall have the entire management of and superintendence over the affairs, concerns, and property of the said University; and in all cases unprovided for by this Act, it shall be lawful for the Chancellor, Vice-Chancellor, and Fellows to act in such manner as shall appear to them best calculated to promote the purposes intended by the said University.

Fees.

XV. The said Chancellor, Vice-Chance lor, and Fellows shall have power to charge such reasonable fees for the Degrees to be conferred by them, and upon admission into the said University, and for continuance therein, as they, with the approbation of the Governor-General of India in Council, shall from time to time see fit to impose. Such fees shall be carried to one General Fee Fund for the payment of expenses of the said University, under the direction and regulations of the Governor-General of India in Council, to whom the accounts of income and expenditure of the said University shall once in every year be submitted for such examination and audit as the said Governor-General of India in Council may direct.

Annual Accounts.

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THE INDIAN UNIVERSITIES ACT 1904 (VIII OF 1904).

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THE FIRST SCHEDULE.—*EX-OFFICIO* FELLOWS OF THE UNIVERSITY.
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ACT No. VIII OF 1904.

PASSED BY THE GOVERNOR-GENERAL OF INDIA IN COUNCIL.

(*Received the assent of the Governor-General on the 24th March*, 1904.)

This Act came into force on the 1st September, 1904.

An Act to amend the law relating to the Universities of British India.

WHEREAS by Acts II, XXII and XXVII of 1857, Act XIX of 1882 and Act XVIII of 1887, Universities were established and incorporated at Calcutta, Bombay, Madras, Lahore and Allahabad;

And whereas by Act XLVII of 1860 the Universities of Calcutta, Madras and Bombay were empowered to confer such degrees as should be appointed in the manner provided by the Act;

And whereas by Act I of 1884 the Universities of Calcutta, Madras and Bombay were further empowered to confer the honorary degree of Doctor in the Faculty of Law;

And whereas it is expedient to amend the law relating to the Universities of British India;

It is hereby enacted as follows:—

Short title and commencement.

1. (*1*) This Act may be called the Indian Universities Act, 1904; and

(*2*) It shall come into force on such date as the Government may fix in this behalf by notification in the *Gazette of India* or the local official Gazette, as the case may be.

Interpretation.

2. (*1*) This Act shall be deemed to be part of each of the Acts by which the said five Universities were respectively established and incorporated.

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(2) In this Act, unless there is anything repugnant in the subject or context,—

(a) the term " College " or " affiliated College " includes any collegiate institution affiliated to or maintained by the University :

(b) the expression " the Government " means in relation to the University of Calcutta the Governor-General in Council, and in relation to the other Universities the Local Government : and

(c) the expressions " the University " and " the Act of Incorporation " and any expression denoting any University, authority or officer or any statute, regulation, rule or by-law of the University shall be construed with reference to each of the said Universities respectively.

The University.

Incorporation and powers of the University.

3. The University shall be and shall be deemed to have been incorporated for the purpose (among others) of making provision for the instruction of students, with power to appoint University Professors and Lecturers, to hold and manage educational endowments, to erect, equip and maintain University libraries, laboratories and museums, to make regulations relating to the residence and conduct of students, and to do all acts, consistent with the Act of Incorporation and this Act, which tend to the promotion of study and research.

Constitution and powers of the Senate.

4. (1) Notwithstanding anything contained in the Act of Incorporation, the Body Corporate of the University shall consist of—

(a) the Chancellor ;

(b) in the case of the University of Calcutta, the Rector ;

(c) the Vice-Chancellor ;

(d) the *ex-officio* Fellows ; and

(e) the Ordinary Fellows—

(i) elected by registered Graduates or by the Senate ;

(ii) elected by the Faculties ; and

(iii) nominated by the Chancellor.

(2) The Ordinary Fellows shall, save as herein otherwise provided, hold office for five years :

Provided that an Ordinary Fellow who has vacated his office may, subject to the provisions of this Act, be elected or nominated to be an Ordinary Fellow.

(3) The Body Corporate shall be the Senate of the University, and all powers which are by the Act of Incorporation or by this Act conferred upon the Senate, or upon the Chancellor, Vice-

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Chancellor and Fellows in their corporate capacity, or, in the case of the University of Calcutta, upon the Chancellor, Rector, Vice-Chancellor and Fellows in their corporate capacity, shall be vested in, and exercised by, the Senate constituted under this Act, and all duties and liabilities imposed upon the University by the Act of Incorporation shall be deemed to be imposed upon the Body Corporate as constituted under this Act.

(*4*) No act done by the University shall be deemed to be invalid merely by reason of any vacancy among either class of elected Ordinary Fellows, or by reason of the total number of Ordinary Fellows or of members of the profession of education to be included among Ordinary Fellows, being less than the minimum prescribed by this Act.

Fellows.

Ex-officio Fellows.

5. (*1*) Notwithstanding anything contained in the Act of Incorporation, the persons for the time being performing the duties of the offices mentioned in the list contained in the first schedule to this Act or added to the said list under sub-section (*2*) shall be the *ex-officio* Fellows of the University.

(2) The Government may, by notification published in the *Gazette of India* or in the local official Gazette, as the case may be, make additions to, or alterations in, the list of offices contained in the said schedule :

Provided that the number of *ex-officio* Fellows shall not exceed ten.

Ordinary Fellows.

6. (*1*) In the case of the Universities of Calcutta, Bombay and Madras, the number of Ordinary Fellows shall not be less than fifty nor exceed one hundred ; and of such number—

(*a*) ten shall be elected by registered Graduates ;
(*b*) ten shall be elected by the Faculties ; and
(*c*) the remainder shall be nominated by the Chancellor.

(*2*) In the case of the Universities of the Punjab and Allahabad, the number of Ordinary Fellows shall not be less than forty nor exceed seventy-five ; and of such number—

(*a*) ten shall be elected by the Senate or by registered Graduates ;
(*b*) five shall be elected by the Faculties ; and
(*c*) the remainder shall be nominated by the Chancellor.

(*3*) The election of any Ordinary Fellow shall be subject to the approval of the Chancellor.

(*4*) Elections of the Ordinary Fellows by the Faculties and nominations of such Fellows by the Chancellor under this section

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shall be made in such manner as to secure that not less than two-fifths of the Fellows so elected and so nominated respectively shall be persons following the profession of education.

Ordinary fellows elected by registered graduates.

7. (*1*) Once in every year, on such date the Chancellor may appoint in this behalf, there shall if necessary, be an election to fill any vacancy among the Ordinary Fellows elected by registered Graduates.

(*2*) The Syndicate shall maintain a register on which any Graduate who—

(*a*) has taken the degree of Doctor or Master in any Faculty, or

(*b*) has graduated in any Faculty not less than ten years before registration, shall, subject to the payment of an initial fee of such amount as may be prescribed by the regulations, be entitled to have his name entered upon application made within the period of three years from the commencement of this Act or of one year from the date on which he becomes so entitled :

Provided that, if such application is made after the expiry of either of the said periods, the applicant shall be entitled to have his name entered on payment of the said initial fee, and of such further sum as may be prescribed by the regulations.

(*3*) The name of any Graduate entered on the register shall, subject to the payment of an annual fee of such amount as may be prescribed by the regulations, be retained thereon, and in case of default, shall be removed therefrom, but shall, at any time, be re-entered upon payment of all arrears :

Provided that a Graduate whose name has been already entered on the register may at any time compound for all subsequent payments of the annual fee by paying the sum prescribed in this behalf by the regulations.

(*4*) No person other than a Graduate whose name is entered on the said register shall be qualified to vote or to be elected at an election held under sub-section (*1*).

(*5*) A Graduate registered under this section shall be entitled to such further privileges as may be determined by the regulations.

Ordinary Fellows elected by Senate.

8. (*1*) The provisions of section 7 shall not apply to the University of the Punjab or to the University of Allahabad until the Chancellor, with the previous sanction of the Governor-General in Council and by notification in the local official Gazette, so directs ; and until such time the Ordinary Fellows of the said Universities, who would be elected by registered Graduates if the said provisions were in force, shall be elected by the Senate.

(*2*) In the case of the University of the Punjab and the Uni-

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versity of Allahabad, there shall, if necessary, be an election, once in every year, on such date as the Chancellor may appoint in this behalf, to fill any vacancy among the Ordinary Fellows elected by the Senate.

Election by the Faculties.

9. (*1*) Once in every year, on such date as the Chancellor may appoint in this behalf, there shall, if necessary, be an election to fill any vacancy among the Ordinary Fellows elected by the Faculties.

(*2*) An election under sub-section (*1*) shall be held, subject to such directions prescribing the qualifications of the persons to be elected as may, from time to time, be given by the Chancellor, with a view to secure the return of duly qualified persons and the fair representation of different branches of study in the Senate.

Nomination by the Chancellor.

10. Subject to the provisions of section 6, the Chancellor may nominate any number of fit and proper persons to be Ordinary Fellows.

Vacating of office.

11. (*1*) Any Ordinary Fellow may, by letter addressed to the Chancellor, resign his office.

(*2*) Where any Ordinary Fellow has not attended meeting of the Senate, other than a Convocation, during the period of one year, the Chancellor may declare his office to be vacated.

Transitory Provisions.

Election and nomination of Ordinary Fellows within one year after commencement of Act, and temporary continuance of existing University administration.

12. In their application to the election and nomination of Ordinary Fellows within the period of one year after the commencement of this Act and to the current business of the University, the provisions of this Act shall be read as subject to the following restrictions and modifications :—

(*a*) In the case of the Universities of Calcutta, Bombay, and Madras, the Chancellor shall, as soon as may be after the commencement of this Act, make an order directing that the Ordinary Fellows who under the said provisions are to be elected by registered Graduates, shall be elected by the elected Fellows holding office at the commencement of this Act, or by such Graduates of the University as the Chancellor may determine, or partly by elected Fellows and partly by such Graduates, and in such manner as the Chancellor may direct.

(*b*) When the Ordinary Fellows mentioned in clause (*a*) have been elected, the Chancellor shall proceed to the nomination of Ordinary Fellows under section 6, sub-section (*1*), clause (*c*).

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(*c*) The Ordinary Fellows mentioned in clauses (*a*) and (*b*) shall, as soon as may be after their appointment and in such manner as the Chancellor may direct, elect the Fellows who under the said provisions are to be elected by the Faculties.

(*d*) In the case of the Universities of the Punjab and Allahabad, the Chancellor shall, as soon as may be after the commencement of this Act, proceed to nominate Ordinary Fellows under section 6, sub-section (*2*), clause (*c*).

(*e*) When Ordinary Fellows have been appointed under clause (*d*), the Chancellor shall make an order directing that the Fellows who under the said provisions are to be elected by the Senate, shall be elected by the Ordinnary Fellows appointed under clause (*d*), or by elected Fellows holding office at the commencement of this Act, or partly by such Ordinary Fellows and partly by elected Fellows, in such manner as the Chancellor may direct.

(*f*) The Ordinary Fellows mentioned in clauses (*d*) and (*e*) shall, as soon as may be after their appointment, and in such manner as the Chancellor may direct, elect the Fellows, who under the said provisions are to be elected by the Faculties.

(*g*) An election under clause (*c*) or clause (*f*) shall be made subject to such directions prescribing the qualifications of the persons to be elected as may be given by the Chancellor, with a view to secure the return of duly qualified persons and a fair representation of different branches of study in the Senate.

(*h*) As soon as Ordinary Fellows have been nominated and elected under clauses (*a*), (*b*) and (*c*), or under clauses (*d*), (*e*), and (*f*), as the case may be, and the persons so elected have been approved by the Chancellor, the Chancellor shall declare that the Body Corporate of the University has been constituted in accordance with the provisions of this Act, and shall append to the declaration a list of the Senate, and shall forward the said declaration and the appended list to the Governor-General in Council, who shall cause the declaration and list to be published in the *Gazette of India*.

(*i*) The seniority of the Fellows included in the list mentioned in clause (*h*) shall be determined by the order in which their names appear in the list.

(*j*) Until the said declaration is published under clause (*h*), the Fellows holding office at the commencement of

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this Act shall, together with the Chancellor and the Vice-Chancellor, continue to be the Senate of the University, and shall be entitled to exercise the powers conferred upon them by the Act of Incorporation.

(*k*) Every Ordinary Fellow elected or nominated under this section shall, unless his Fellowship is previously vacated by death, resignation or any other cause, hold office for not less than three years.

(*l*) At or about the end of the third year from the publication of the declaration mentioned in clause (*h*), the names of, as nearly as may be, one-fifth of the total initial number—

(*i*) of Ordinary Fellows elected under clause (*a*) or clause (*e*), as the case may be.

(*ii*) of Ordinary Fellows elected under clause (*c*) or clause (*f*); and

(*iii*) of Ordinary Fellows nominated by the Chancellor, (after deducting from the said one-fifth the names in each class which have previously been removed from the list mentioned in clause (*h*) by reason of death, resignation or any other cause) shall be drawn by lot from among the elected and the nominated Ordinary Fellows whose names were included in the list mentioned in clause (*h*), and those whose names are so shown shall thereupon cease to be Ordinary Fellows.

(*m*) At or about the end of the fourth, fifth and sixth years from the publication of the said declaration, the names of Ordinary Fellows shall be drawn by lot from each class of Ordinary Fellows included in the said list, in the manner provided in clause (*l*), so as to secure that, as nearly as may be, one-fifth of the Fellowships of the Ordinary Fellows so included in each class shall be vacated in each year.

(*n*) An Ordinary Fellow elected or nominated under this section, who has not previously vacated his Fellowship shall cease to be a Fellow at the end of the seventh year from the publication of the said declaration.

(*o*) The Vice-Chancellor holding office at the commencement of this Act shall continue to hold office until the publication of the said declaration, and shall if he is a member of the Senate as constituted under this Act, continue to hold office as Vice-Chancellor for the remainder of the term for which he was originally appointed.

(*p*) The members of the Syndicate holding office at the commencement of this Act shall continue to conduct the

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executive business of the University until the publication of the said declaration; and, upon such publication, the Senate shall, in such manner as the Chancellor may direct, appoint a provisional Syndicate to conduct the executive business of the University until the Syndicate has been constituted under this Act.

(*q*) The Senate as constituted under this Act may give orders for the provisional constitution of Faculties, Boards of Studies and of any Board or Committee of the Senate, pending the constituiton of such Faculties, Boards and Committees in conformity with the regulations.

(*r*) University Examiners and all officers and servants of the University shall continue to hold office and to act, subject to the conditions governing their tenure of office or employment, except in so far as such conditions may be altered by competent authority.

(*s*) The statutes, regulations and by-laws of the University in force at the commencement of this Act shall continue to be in force, except in so far as the said statutes, regulations and by-laws shall be altered or repealed by competent authority.

Honorary Fellows.

Honorary Fellows.

13. (*1*) (*a*) A Fellow holding office at the commencement of this Act shall cease to be a Fellow.

(*b*) Where a Fellow included in clause (*a*) does not become a Fellow under this Act, he shall be an Honorary Fellow for life.

(*c*) Where a Fellow included in clause (*a*) becomes a Fellow under this Act, he shall, whenever and so often as he ceases to be a Fellow under this Act, become an Honorary Fellow as provided in clause (*b*).

(*2*) The Chancellor may nominate any person to be an Honorary Fellow for life, who is eminent for his attainments in any branch of learning, or is an eminent benefactor of the University, or is distinguished for services rendered to the cause of education generally.

(*3*) Notwithstanding anything contained in this section, any Fellow who at the commencement of this Act is entitled as such to vote for the election of any person to be a member of any Council for the purpose of making laws and regulations or of any local authority shall continue to be so entitled as if this Act had not been passed.

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Faculties and Syndicate.

Faculties.

14. (*1*) Nothing contained in the Act of Incorporation shall be deemed to prohibit the constitution of a new Faculty or the abolition or reconstitution of any existing Faculty by the Senate under regulations made in accordance with the provisions of this Act.

(*2*) Regulations made under sub-section (*1*) may—

(*a*) provide for the assignment of Fellows to the several Faculties by order of the Senate ; and

(*b*) empower the Fellows so assigned to add to their number in such manner and for such period as may be prescribed, Graduates in the Faculty and other persons possessing special knowledge of the subjects of study represented by the Faculty :

Provided that the number of persons so to be added to the Faculty shall not exceed half the number of Fellows assigned to the Faculty.

(3) A person added to a Faculty under sub-section (*2*), clause (*b*), shall have the right to take part in the ordinary business of the Faculty, and in any election of an Ordinary Fellow by the Faculty, but shall not be entitled to take part in the election of the Syndicate.

Syndicate.

15. (*1*) The executive government of the University shall be vested in the Syndicate, which shall consist of—

(*a*) the Vice-Chancellor as Chairman ;

(*b*) the Director of Public Instruction for the Province in which the headquarters of the University are situated ; and, in the case of the University of Allahabad, also the Director of Public Instruction in the Central Provinces ; and

(*c*) not less than seven or more than fifteen *ex-officio* or Ordinary Fellows elected by the Senate or by the Faculties in such manner as may be provided by the regulations, to hold office for such period as may be prescribed by the regulations.

(*2*) The regulations referred to in sub-section (*1*) shall be so framed as to secure that a number not falling short by more than one of a majority of the elected members of the Syndicate shall be Heads of, or Professors in, College affiliated to the University.

(*3*) If in the case of any election the question is raised whether any person is or is not a Professor within the meaning of sub-section (*2*), the question shall be decided by the Senate.

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Degrees.

16. The Senate may institute and confer such degrees, and grant such diplomas, licenses, titles and marks of honour in respect of degrees and examinations as may be prescribed by regulation.

Degrees, diplomas, licenses, titles and marks of honour.

17. Where the Vice-Chancellor and not less than two-thirds of the other members of the Syndicate recommend that an honorary degree be conferred on any person on the ground that he is, in their opinion, by reason of eminent position and attainments, a fit and proper person to receive such a degree, and where their recommendation is supported by not less than two-thirds of the Fellows present at a meeting of the Senate and is confirmed by the Chancellor, the Senate may confer on such person the honorary degree so recommended without requiring him to undergo any examination.

Honorary degrees.

18. Where evidence is laid before the Syndicate showing that any person on whom a degree, diploma, license, title or mark of honour conferred or granted by the Senate has been convicted of what is, in their opinion, a serious offence, the Syndicate may propose to the Senate that the degree, diploma, license title or mark of honour be cancelled, and, if the proposal is accepted by not less than two-thirds of the Fellows present at a meeting of the Senate and is confirmed by the Chancellor, the degree, diploma, license, title or mark of honour shall be cancelled accordingly.

Cancellation of degrees and the like.

Affiliated Colleges.

19. Save on the recommendation of the Syndicate, by special order of the Senate, and subject to any regulations made in this behalf, no person shall be admitted as a candidate at any University examination other than an examination for matriculation, unless he produces a certificate from a College affiliated to the University, to the effect that he has completed the course of instruction prescribed by regulation.

Certificate required of candidates for examination.

20. Any College affiliated to the University before the passing of this Act may continue to exercise the rights conferred upon it by such affiliation, save in so far as such rights may be withdrawn or restricted in the exercise of any power confered by the act of Incorporation or by this Act.

Existing Colleges.

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21. (*1*) A College applying for affiliation to the University shall send a letter of application to the Registrar, and shall satisfy the Syndicate— Affiliation.

(*a*) that the college is to be under the management of a regularly-constituted governing body ;

(*b*) that the qualifications of the teaching staff and the conditions governing their tenure of office are such as to make due provision for the courses of instruction to be undertaken by the College ;

(*c*) that the building in which the College is to be located are suitable, and that provision will be made, in conformity with the regulations, for the residence, in the College o in lodgings approved by the College, of students not residing with their parents or guardians, and for the supervision and physical welfare of students ;

(*d*) that due provision has been or will be made for a library ;

(*e*) where affiliation is sought in any branch of experimental science, that arrangements have been or will be made in conformity with the regulations for imparting instruction in that branch of science in a properly-equipped laboratory or museum ;

(*f*) that due provision will, so far as circumstances may permit, be made for the residence of the Head of the College and some members of the teaching staff in or near the College or the place provided for the residence of students ;

(*g*) that the financial resources of the College are such as to make due provision for its continued maintenance ;

(*h*) that the affiliation of the College, having regard to the provision made for students by other Colleges in the same neighbourhood, will not be injurious to the interests of education or discipline ; and

(*i*) that the College rules fixing the fees (if any) to be paid by the students have not been so framed as to involve such competition with any existing College in the same neighbourhood as would be injurious to the interests of education.

The application shall further contain an assurance that after the College is affiliated, any transference of management and all changes in the teaching staff shall be forthwith reported to the Syndicate.

(*2*) On reciept of a letter of application under sub-section (*2*), the Syndicate shall—

(*a*) direct a local inquiry to be made by a competent person authorized by the Syndicate in this behalf ;

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(*b*) make such further inquiry as may appear to them to be necessary; and

(*c*) report to the Senate on the question whether the application should be granted or refused, either in whole or in part, embodying in such report the results of any inquiry under clauses (*a*) and (*b*).

And the Senate shall, after such further inquiry (if any) as may appear to them to be necessary, record their opinion on the matter.

(*3*) The Registrar shall submit the application and all proceedings of the Syndicate and Senate relating thereto to the Government, who, after such further inquiry as may appear to them to be necessary, shall grant or refuse the application or any part thereof.

(*4*) Where the application or any part thereof is granted, the order of the Government shall specify the courses of instruction in respect of which the College is affiliated; and, where the application or any part thereof is refused, the grounds of such refusal shall be stated.

(*5*) An application under sub-section (*1*) may be withdrawn at any time before an order is made under sub-section (*3*).

Extension of affiliation.

22. Where a College desires to add to the courses of instruction in respect of which it is affil ated, the procedure prescribed by section 21 shall, so far as may be, be followed.

Inspection and report.

23. (*1*) Every College affiliated to the University, whether before or after the commencement of this Act, shall furnish such reports, returns and other information as the Syndicate may require to enable it to judge of the efficiency of the College.

(*2*) The Syndicate shall cause every such College to be inspected from time to time by one or more competent persons authorized by the Syndicate in this behalf.

(*3*) The Syndicate may call upon any College so inspected to take, within a specified period, such action as may appear to them to be necessary in respect of any of the matters referred to in section 21, sub-section (*1*).

Disaffiliation.

24. (*1*) A member of the Syndicate who intends to move that the rights conferred on any College by affiliation be withdrawn, in whole or in part, shall give notice of his motion, and shall state in writing the grounds on which the motion is made.

(*2*) Before taking the said motion into consideration, the Syndicate shall send a copy of the notice and written statement mentioned in sub-section (*1*) to the Head of the College concerned, together with an intimation that any representation in writing

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submitted within a period specified in such intimation on behalf of the College will be considered by the Syndicate :

Provided that the period so specified may, if necessary, be extended by the Syndicate.

(*3*) On receipt of the representation or on expiration of the period referred to in sub-section (*2*), the Syndicate, after considering the notice of motion, statement and representation and after such inspection by any competent person authorized by the Syndicate in this behalf, and such further inquiry as may appear to them to be necessary, shall make a report to the Senate.

(*4*) On receipt of the report under sub-section (*3*) the Senate shall, after such further inquiry (if any) as may appear to them to be necessary, record their opinion on the matter.

(*5*) The Registrar shall submit the proposal and all proceedings of the Syndicate and Senate relating thereto to the Government, who, after such further inquiry (if any) as may appear to them to be necessary, shall make such order as the circumstances may, in their opinion, require.

(*6*) Where by an order made under sub-section (*3*) the rights conferred by affiliation are withdrawn, in whole or in part, the grounds for such withdrawal shall be stated in the order.

Regulations.

Regulations.

25. (*1*) The Senate, with the sanction of the Government, may from time to time make regulations consistent with the Act of Incorporation as amended by this Act and with this Act to provide for all matters relating to the University.

(*2*) In particular, and without prejudice to the generality of the foregoing power, such regulations may provide for—

(*a*) the procedure to be followed in holding any election of Ordinary Fellows ;

(*b*) the constitution, reconstitution or abolition of Faculties, the proportion in which the members, other than the *ex-officio* members of the Syndicate, shall be elected to represent the various Faculties, and the mode in which such election shall be conducted ;

(*c*) the procedure at meetings of the Senate, Syndicate and Faculties and the quorum of members to be required for the transaction of business ;

(*d*) the appointment of Fellows and others to be members of Boards of Studies, and the procedure of such Boards and the quorum of members to be required for the transaction of business ;

(*e*) the appointment and duties of the Registrar and of offi-

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cers and servants of the University, and of Professors and Lecturers appointed by the University ;

(*f*) the appointment of Examiners, and the duties and powers of Examiners in relation to the examinations of the University ;

(*g*) the form of the certificate to be produced by a candidate for examination under section 19, and the condition on which any such certificate may be granted ;

(*h*) the registers of Graduates and students to be kept by the University, and the fee (if any) to be paid for the entry or retention of a name on any such register ;

(*i*) the inspection of Colleges and the reports, returns and other information to be furnished by Colleges ;

(*j*) the registers of students to be kept by Colleges affiliated to the University ;

(*k*) the rules to be observed and enforced by Colleges affiliated to the University in respect of the transfer of students ;

(*l*) the fees to be paid in respect of the courses of instruction given by Professors or Lecturers appointed by the University ;

(*m*) the residence and conduct of students ;

(*n*) the courses of study to be followed and the conditions to be complied with by candidates for any University examination, other than an examination for matriculation, and for degrees, diplomas, licenses, titles, marks of honour, scholarships and prizes conferred or granted by the University ;

(*o*) the conditions to be complied with by schools desiring recognition for the purpose of sending up pupils as candidates for the matriculation examination and the conditions to be complied with by candidates for matriculation, whether sent up by recognised schools or not ;

(*p*) the conditions to be complied with by candidates, not being students of any College affiliated to the University, for degrees, diplomas, licenses, titles, marks of honour, scholarships and prizes conferred or granted by the University ; and

(*q*) the alteration or cancellation of any rule, regulation, statute or bylaw of the University in force at the commencement of this Act.

New body of regulations.

26. (*1*) Within one year after the commencement of this Act, or within such further period as the Government may fix in this behalf,—

(*a*) the Senate as constituted under this Act shall cause a

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revised body of regulations to be prepared and submitted for the sanction of the Govenment;

(*b*) if any additions to, or alterations in the draft submitted appear to the Government to be necessary, the Government, after consulting the Senate, may sanction the proposed body of regulations, with such additions and alterations as appear to the Government to be necessary.

(*2*) Where a draft body of regulations is not submitted by the Senate within the period of one year after the commencement of this Act, or within such further period as may be fixed under sub-section (*1*), the Government may, within one year after the expiry of such period or of such further period, make regulations which shall have the same force as if they had been prepared and sanctioned under sub-section (*1*).

Miscellaneous.

Territorial exercise of powers.

27. The Governor-General in Council may, by general or special order, define the territorial limits within which, and specify the Colleges in respect of which, any powers conferred by or under the Act of Incorporation or this Act shall be exercised.

Rector.

28. (*1*) The Lieutenant-Governor of Bengal for the time being shall be the Rector of the University of Calcutta, and shall have precedence in any Convocation of the said University next after the Chancellor and before the Vice-Chancellor.

(*2*) The Chancellor may delegate any power conferred upon him by the Act of Incorporation or this Act to the Rector.

Repeals.

29. The Acts mentioned in the second schedule are hereby repealed to the extent specified in the fourth column thereof.

THE FIRST SCHEDULE.

(*Section* (*5.*)

EX-OFFICIO FELLOWS OF THE UNIVERSITY.

The University of Calcutta.

The Chief Justice of the High Court of Judicature at Fort William in Bengal.

The Lord Bishop of Calcutta.

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The Civil Ordinary Members of the Council of the Governor-General.

The Directors of Public Instruction in Bengal, Burma and Assam.

The University of Bombay.

The Chief Justice of the High Court of Judicature at Bombay.

The Bishop of Bombay.

The Ordinary Members of the Council of the Governor of Bombay.

The Director of Public Instruction in Bombay

The University of Madras.

The Chief Justice of the High Court of Judicature at Madras.

The Bishop of Madras.

The Ordinary Members of the Council of the Governor of Madras.

The Director of Public Instruction in Madras.

The University of the Panjab.

The Chief Judge of the Chief Court of the Punjab.

The Bishop of Lahore.

The Director of Public Instruction in the Punjab.

The representatives of such Chiefs (if any) of territories not comprised in British India as the Local Government may, by notification in the local official Gazette, specify in this behalf.

The University of Allahabad.

The Chief Justice of the High Court of Judicature for the North-Western Provinces.

The Bishop of Lucknow.

The Directors of Public Instruction in the United Provinces of Agra and Oudh and in the Central Provinces.

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THE SECOND SCHEDULE.

(*Section* 29.)

ENACTMENTS REPEALED.

Year.	No.	Short title.	Extent of repeal.
1857	II	The Calcutta University Act, 1857.	In section 2, the word "said," wherever it occurs. In section 3, the first sentence and the words "Provided that." In section 5, the words "in the Calcutta Gazette." Section 6. Section 8, except the first sentence. Sections 9, 10, 11, 12, 13, and 14.
1857	XXII	The Bombay University Act, 1857.	In section 2, the word "said," wherever it occurs. In section 3, the first sentence and the words "Provided that." Section 6. Section 8, except the first sentence. Sections 9, 10, 11, 12, 13, and 14.
1857	XXVII	The Madras University Act, 1857.	In section 2, the word "said," wherever it occurs. In section 3, the first sentence and the words "Provided that." Section 6. Section 8, except the first sentence. Sections 9, 10, 11, 12, 13, and 14.
1860	XLVII	The Indian Universities (Degrees) Act, 1860.	The whole Act.
1882	XIX	The Punjab University Act, 1882.	Section 6. In section 7, sub-section (1). In section 8, in sub-section (1), the words after the word "Fellow" to the end of the sub-section; and in sub-section (2), the words from the word "appointed" to the words "this Act." In section 9, the words "under this Act." Sections 10 and 11. Section 12, except the last paragraph.

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Year.	No.	Short title.	Extent of repeal.
			Sections 13, 14, 15, 16 and 18. In section 20, the words " made or " " section six, clauses (*b*) and (*c*), and " and " under sections fourteen, fifteen and sixteen." In the Schedule, Part I.
1884	1	The Indian Universities Honorary Degrees, Act, 1884.	The whole Act.
1887	XVIII	The Allahabad University Act 1887.	Section 5. In section 6, sub-section (1). In section 7, sub-section (1), and in sub-section (2), the words after the word.
1887	XVIII	The Allahabad University Act, 1887.	" Fellow " to the end of the sub-section. Sections 10, 11, 12, 13, 14, 15, and 17. In section 20, the words and figures " appointments made and," " under section 5, sub-section (1), clause (*b*) and (*c*)," " under sections 14 and 15 " and " under section 17." In the Schedule, Part I.

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III.

CHAPTER I.

THE SENATE.

1. The Senate shall meet ordinarily once a year in the month of January and may meet at other times if convened by the Vice-Chancellor, or, in his absence from Calcutta, or when the office of Vice-Chancellor is vacant, by the Senior Ordinary Fellow present in Calcutta.

2. The *ex-officio* Fellows of the University are always the Senior Fellows in order of official precedence. The seniority of all Ordinary Fellows is according to the date and order of their first appointment under the Indian Universities Act, 1904.

3. The Vice-Chancellor, or, in his absence, or when the office of Vice-Chancellor is vacant, the Senior Ordinary Fellow present in Calcutta shall convene a meeting of the Senate on the requisition of any six Fellows.

4. No question shall be brought under the consideration of the Senate which has not first been considered by the Syndicate.

5. Except in the case of urgent business, twelve clear days' notice shall be given of every meeting.

6. The Registrar shall, with the notice, issue an agenda paper showing the business to be brought before the meeting, the terms of all resolutions to be proposed of which notice in writing has previously reached him, and the names of the proposers. Notices in writing of additional resolutions and of proposed amendments and the terms thereof should reach the Registrar four clear days before the day of such meeting.

7. The Registrar shall also, two clear days before the day of meeting, forward to each member of the Senate an agenda paper showing all the motions and amendments and any additional business proposed by the Syndicate; and no motion and, unless expressly sanctioned by a majority of the members present, no amendment, of which such notice has not been given, shall be put to the meeting, other than a motion for any change in the order of business, a motion for dissolution, or adjournment, or for passing to the next business on the agenda paper, or for directing the Syndicate to review their decision, or an amendment which may be accepted by the Chairman as merely formal. The adjournment of a debate may, however, be moved for the purpose of giving notice of an amendment which has been disallowed.

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8. Fifteen members of the Senate shall constitute a quorum, and all questions shall be decided by a majority of the votes of the members present.

9. The Chancellor, or, in his absence, the Rector, or, in the absence of both, the Vice-Chancellor shall preside at meetings of the Senate, or, if the Vice-Chancellor be not present, a Chairman for the occasion shall be elected by the Members present. If the votes, including that of the Chairman, are equally divided, the Chairman shall have a casting vote.

Order of Business.

10. At the time appointed for the meeting, the Registrar shall take notice whether a quorum is present. If there is not, and if a quorum is not present within fifteen minutes, no meeting shall be held.

11. If at any time during the progress of business any member shall call attention to the fact that there is not a quorum present, the meeting shall forthwith be dissolved. Such dissolutions shall be recorded by the Registrar under the signature of the Chairman.

12. At every meeting the business shall be taken in the following order :

(i) The election, if necessary, of the Chairman.
(ii) University appointments.
(iii) Any motion for a change in the order of business.
(iv) Matters brought forward by the Syndicate.
(v) Other business.

Rules of Debate.

(*i*)—*Motions.*

13. Every motion shall be affirmative in form, and shall begin with the word ' that.'

14. Every motion at a meeting must be seconded ; otherwise it shall drop.

15. When a motion has been seconded, it shall be stated from the Chair unless it be ruled out of order.

16. When the motion has been thus stated, it may be discussed as a question to be resolved either in the affirmative or in the negative, or as proposed to be varied by way of amendment. When no Fellow rises to speak to the motion, the Chairman shall proceed to put the question to the vote in the manner hereinafter mentioned.

17. Not more than one motion and one amendment thereto shall be placed before the meeting at the same time.

18. A motion once disposed of shall not be again brought

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forward at the same meeting, or at any adjournment thereof. A motion substantially identical in part with one already disposed of may be brought forward with the omission of such part.

(ii)—Amendments.

19. Any proposal before the meeting may be amended (*a*) by leaving out a word or words; (*b*) by leaving out a word or words in order to add or insert some other word or words; (*c*) by adding or inserting a word or words.

When the amendment is of the first kind, the form in which it will be proposed and handed to the Chair will be, "That the words (mentioning them) be left out of the question."

When the amendment is of the second kind, the form will be, "That the words (mentioning them) be left out of the question, in order to add (or insert) the words (mentioning them)."

When the amendment is of the third kind, the form will be, "That the words (mentioning them) be added (or inserted)."

20. No amendment shall be proposed which would in effect constitute a direct negative to the original motion, or which would alter the first word.

21. Every amendment must be relevant to the motion upon which it is moved.

22. No amendment shall be proposed which substantially raises a question already disposed of by the meeting, or which is inconsistent with any resolution already passed by it.

23. An amendment, the substance of which has been disposed of in part, may be modified by its proposer so as to retain only the part not so disposed of.

24. The order in which amendments of which previous notice has been given are to be brought forward shall be determined by the Chairman.

25. An amendment must be seconded in the same way as a motion; otherwise it shall drop. A seconder of an amendment may reserve his speech with the permission of the Chairman.

26 When an amendment has been moved and seconded it shall, unless ruled out of order, be stated from the Chair, and then the debate may proceed on the original motion and the amendment together.

27. When the Chairman has ascertained that no other Fellow entitled to address the meeting desires to speak, the mover of the original resolution may reply upon the whole debate. But the mover of an amendment, or of a motion for dissolution or adjournment, or of a motion to pass to the next business on the agenda paper has no right of reply.

28. No Fellow shall speak to the question after the mover has entered on his reply.

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29. When the debate is concluded the Chairman shall, after summing up, if he so desires, put the question to the vote thus :

If there is no amendment, the Chairman shall say, " The question is " and state the motion, and shall then take the votes of the meeting.

If there is an amendment, the Chairman shall say, " It has been moved " and shall state the motion ; then he shall say " Since which it has been moved by way of amendment."

(*a*) " that the following word or words be omitted " (if the amendment is one of the first kind) ;

or (*b*) " that the following word or words be omitted, and that the following word or words be added, or inserted," indicating where such words are to be added or inserted (if the amendment is of the second kind).

or (*c*) " that the following word or words be added or inserted, " mentioning where such word or words are proposed to be added or inserted (if the amendment is of the third kind).

The votes of the members present in the meeting shall then be taken on the amendment by a show of hands.

30. If an amendment is negatived, the original motion shall be again stated from the Chair, and, subject to the foregoing Regulations, any other amendment which is in order may then be proposed thereto.

31. If an amendment is carried, the motion as amended shall be stated from the Chair, and may then be debated as a substantive question, to which the further amendments to the original motion which are in order and so far as they shall be applicable may be proposed, subject to the foregoing Regulations, and such further amendments shall be disposed of in the same manner as the original amendment.

(*iii*)—*Adjournments.*

32. A motion " That this meeting be now dissolved " or that this meeting be now adjourned to (some specified date and hour)" may be moved at any time as a distinct question, but not as an amendment, nor so as to interrupt a speech. If a motion for dissolution is carried, the business before the meeting shall drop. If a motion for adjournment is carried, the meeting shall be adjourned, and the business shall be resumed at the adjourned meeting.

33. A motion " That the debate be now adjourned to (some specified date and hour)" may be moved in the like manner, and if it be carried shall have the effect of postponing the debate on

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the question under consideration till the date and hour specified, and the other items on the agenda paper shall be proceeded with. If the motion be negatived, the debate shall be resumed.

34. No amendment shall be moved to a motion under either of the two last preceding regulations, except one for substituting a different date and hour for that to which it is proposed to adjourn the meeting or debate, or a motion under Regulation 36.

35. A meeting or a debate renewed or continued after an adjournment is to be deemed one with that preceding the adjournment.

36. A motion "That the meeting pass to the next business on the agenda paper" may be made at any time, in like manner and subject to the same rules as one for adjournment. If such a motion be carried, the motion under consideration and the amendment thereon, if any, shall drop.

37. No motion for the dissolution or for the adjournment of the meeting, or for the adjournment of the debate, or to pass to the next business, shall, except by leave of the meeting, be moved or seconded by any Fellow who has spoken to the question then before the meeting, or who, during the discussion of such question, has already made one of the aforesaid motions. Any such motion shall take precedence of any question that may be before the meeting, and, if not withdrawn, must be disposed of before such question.

38. When a motion of the class contemplated in the last preceding Regulation has been brought forward and negatived, no other motion of that class shall be brought forward until after the lapse of what the Chairman shall deem a reasonable time; nor shall a debate be allowed on such second or subsequent motion except with the permission of the Chairman.

(*iv*)—*Miscellaneous.*

39. The Fellow who first rises to speak at the conclusion of a speech has the right to be heard. When two or more Fellows rise to speak at the same time, the Chairman shall decide who shall speak first.

40. Except as hereinafter provided, a Fellow who has spoken to a motion or amendment is not at liberty to speak again to such motion or amendment.

41. In so far as the question raised by an amendment is one on which he has not yet spoken, any Fellow may speak to that question, though he has spoken to the original question or a previous amendment.

42. No Fellow, except with the permission of the meeting, shall speak for more than fifteen minutes when proposing a

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motion or amendment, or for more than ten minutes when seconding or speaking to a motion or amendment, or when replying.

43. It shall be open to the Senate under special circumstances and by a special vote to reduce the time limits specified in Regulation 42

44. The Chairman may at any stage in the proceedings, at his own discretion or at the request of a Fellow, explain the scope and effect of the motion or amendment which is before the meeting. He may also at the conclusion of a debate sum up the debate if he so desires.

45. Proposals relating to the conferring of Honorary Degrees, Votes of Thanks, Messages of Congratulation or Condolence, Addresses, and other matters of a like nature may be moved from the chair.

46. If the Chairman desires to take an active part in a debate he shall vacate the chair until the vote on that debate shall have been taken. During such time the chair shall be taken by the senior Fellow present who has not already taken part in the debate and who waives his right to do so. The acting Chairman shall during the debate in question exercise all the ordinary rights of the Chairman.

47. Any Fellow may, with the permission of the Chairman, rise, even while another is speaking, to explain any expression used by himself which may have been misunderstood by the speaker, but he shall confine himself strictly to such explanation.

48. Any Fellow may call the Chairman's attention to a point of order even while another Fellow is addressing the meeting, but no speech shall be made on such point of order.

49. The Chairman shall be the sole judge on any point of order, and may call any Fellow to order, and may, if necessary, dissolve the meeting.

50. No motion or amendment shall be withdrawn from the decision of the meeting without its unanimous consent; but the consent shall be presumed if the mover states his wish to withdraw the motion or amendment, and the Chairman, after an interval during which no dissent is expressed, announces that it is withdrawn.

51. Any motion or amendment standing in the name of a member who is absent from a meeting, or who declines to move it, may be brought forward by any other member.

(*v*)—*Voting.*

52. On putting any question to the vote, the Chairman shall call for an indication of the opinion of the Senate by a show of hands in the affirmative and negative, and shall declare the result thereof according to his opinion.

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53. Any six Fellows may then demand a division, except on a motion of the kind contemplated in Regulations 32, 33, and 36.

54. The Chairman shall thereupon give such directions for effecting the division as he shall consider expedient. The names of the gentlemen who vote for or against the motion, or decline to vote, shall be recorded.

55. If no division is demanded, any Fellow shall have the right to dissent and to have the fact of his dissent recorded, provided such dissent be announced as soon as the Chairman shall have declared the result of the voting.

COMMITTEES.

56. The Senate may, when it thinks fit, appoint a committee consisting of any number of its members, or it may resolve itself into a committee for the consideration of business duly brought before it.

57. A motion for the appointment of a committee, or for the resolution of the meeting into a committee, may be made by any member at any time, and without the notice required by Regulation 5.

58. A motion for the appointment of a committee must define the purpose for which the committee is to serve and the number of members to compose it. Amendments for enlarging or restricting the operations of a committee or for enlarging or restricting the number, may be made without previous notice. If the motion is carried, the member moving shall name the persons whom he wishes to form the committee. Amendments may be made proposing other names. A ballot shall then be taken, if necessary, and the requisite number appointed from those who obtain the largest number of votes.

59. The quorum for a committee of the whole Senate shall be the same as that provided for the meetings of the Senate; the quorum for a committee appointed by the Senate shall be determined at the time of appointment and shall be not less than a majority of the members appointed.

60. The Chairman of a committee of the whole Senate shall be the same as for a meeting of the Senate; the Chairman of a committee appointed by the Senate shall be appointed by the Senate at the time of the appointment of the committee.

In committee the proceedings shall be governed by the Regulations framed for debate, which, however, may be relaxed at the discretion of the Chairman.

61. The resolutions passed by the Senate in committee shall be embodied in a report prepared by the Registrar and signed by the Chairman, but shall not become final until they have been confirmed by the Senate at a subsequent meeting.

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62. The resolutions of a committee appointed by the Senate shall be embodied in a report prepared by the Registrar or by a member of the committee, which report shall be laid before the committee for adoption or amendment. The report duly signed by the members of the committee, with notes of dissent, if any, shall be presented to the Senate at its next meeting, subject to the provisions of Regulation 5 respecting notice.

Elections.

63. In all cases of election, other than those specifically provided for, the candidates shall be proposed and seconded. If no more candidates are nominated than there are vacancies to be filled, the Chairman shall declare those candidates to be elected. If the number of candidates exceeds the number of vacancies, a vote shall be taken by ballot.

64. In the case of a single appointment, a ballot shall be taken, in which each Fellow shall only been titled to give one vote, and the candidate or candidates receiving the smallest number of votes shall be withdrawn. Another ballot between the remaining candidates shall then be taken, and this procedure shall continue until the number of candidates is reduced to two. There shall then be a final ballot, and the candidate receiving the higher number of votes shall be considered to be duly elected. Provided that if at any stage of the ballot a candidate obtains an absolute majority of votes, the ballot shall cease.

If in any ballot, owing to an equality of votes, all the candidates but one would be eliminated by this procedure, a fresh ballot shall be taken, and if a similar equality again occurs the Chairman shall give a casting vote.

If in any ballot there is an equality of votes among all the candidates, a fresh ballot shall be taken. If the equality be not removed, the Chairman shall give a casting vote, and the candidate receiving this vote shall be regarded as duly elected ; with this exception, it shall be a necessary and sufficient condition for election that a candidate obtain an absolute majority of votes : and should this occur at any stage, the ballot shall cease.

65. In all cases of contested election for two or more appointments, each Fellow shall be entitled to give as many votes as there are appointments to be filled, but shall not give more than one vote for one person. The candidates who obtain the largest number of votes shall be elected, except when by reason of equality of votes the number of such candidates is in excess of the number of appointments to be filled ; in this case a fresh ballot shall be taken among those whose equality of votes has caused such excess. If the result of this ballot leaves the matter still undecided as to one or more of the appointments, the Chairman

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may decide who among the candidates found equal on the second ballot shall be appointed ; or the Chairman may, at his discretion, give such directions for further ballot as the circumstances of the case may justify.

PROTESTS.

66. Any Member of the Senate intending to protest against a Resolution of the Senate shall give notice of his intention to the Registrar within a week from the date of the issue of the Minutes of the meeting at which the Resolution was passed, and, within one week thereafter lodge his protest with the Registrar. The Registrar shall thereupon forward the protest to the Chairman of the Meeting and request him to nominate three Fellows to form a committee to prepare a Memorandum in support of the Resolution, and the committee so nominated shall frame the Memorandum accordingly. The Registrar shall then cause the protest and Memorandum to be printed and circulated to each Member of the Senate ; they shall also be laid on the table at the next meeting of the Senate, and recorded in the Minutes thereof.

If the protest relates to a matter the final decision of which rests with the Chancellor or with the Governor-General in Council, the Registrar shall further submit the protest and Memorandum, together with a copy of the Resolution, to the Chancellor or to the Governor-General in Council, as the case may be, for his consideration and orders.

If a protest has been lodged with the Registrar with reference to a Resolution which requires the confirmation of the Chancellor or of the Governor-General in Council, the Resolution shall not be sent up for confirmation except with the protest and the Memorandum.

RECONSIDERATION.

67. No matter which has been decided by the Senate shall, within a period of twelve months, be reconsidered, except—

At a special meeting of the Senate convened for the purpose upon the requisition of six Fellows.

And unless three-fourths of the members present at such meeting vote in favour of a reconsideration.

MINUTES.

68. Within two weeks after a meeting of the Senate, a draft of the Minutes of such meeting shall be submitted to the Chairman and attested by him. The Minutes shall then be printed and circulated to all Members of the Senate, and such of them as were present shall, within a fortnight of the issue of the Minutes, communicate to the Registrar any exceptions they may take

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to the correctness thereof. The Minutes and the exceptions taken, if any, shall be laid before the next meeting of the Senate, and the Minutes in their final form shall then be confirmed. Once every twelve months, or at such other intervals as the Senate shall direct, the Syndicate shall cause the Minutes of the meetings of the Senate to be printed, and a copy thereof to be forwarded to each Fellow.

GENERAL.

69. In any case not provided for by these Regulations, the Chairman shall give a ruling as to procedure on the principles already laid down.

70. Representatives of the Press and visitors may be admitted to meetings of the Senate, provided they have obtained the permission of the Registrar.

CHAPTER II.

VACANCIES ON THE SENATE.

1. In the first week of December 1907, 1908, 1909, 1910, on such dates as may be determined by the Vice-Chancellor, or the Senior Ordinary Fellow, as the case may be, a ballot shall be taken at the Senate House, with a view to determine who among the three classes of Ordinary Fellows mentioned in section 12, clause (*l*) of the Indian Universities Act, should retire. The ballot shall be taken by the Registrar in the presence of the Vice-Chancellor or the Senior Ordinary Fellow, as the case may be. Every Ordinary Fellow shall be duly informed of the date and hour, and may, if he so desires, be present at the ballot. The Registrar shall forthwith intimate to the Chancellor the names of the retiring Fellows so determined.

Act VIII of 1904, secs. 12 (*l*) and (*m*).

The transaction of University business which is neither formal nor urgent shall, as far as practicable, be avoided, till the vacancies thus caused are filled up, or intimation is received that they will not be filled up.

2. A register shall be kept by the Registrar of the date of appointment of every Ordinary Fellow, and of the date when he will cease to be a Fellow, under section 4, clause (2), or section 12, clause (*n*) of the Indian Universities Act. Not less than six weeks before the date of every approaching vacancy in a Fellowship, the Registrar shall intimate the fact to the Chancellor.

3. A register shall be kept of the attendance of every Ordinary Fellow at meetings of the Senate; and whenever it is ascertained

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that an Ordinary Fellow has not attended any meeting of the Senate, other than a Convocation, during the period of one year, the Registrar shall intimate the fact to the Chancellor, with a view to enable him to take action, if he thinks fit, under section 11, sub-section 2 of the Indian Universities Act.

4. Except as otherwise provided, whenever the Registrar receives information that a vacancy has occurred on the Senate by reason of the retirement of a Fellow under section 3, Act II of 1857, or by death or resignation, or from any other cause, he shall forthwith intimate the fact to the Chancellor.

5. Whenever an Ordinary Fellow ceases to be such from any cause whatever, he shall vacate any University office or appointment held by him in his character as an Ordinary Fellow; and if he is re-elected or re-appointed a Fellow, he shall not again hold such office or appointment unless he is duly appointed thereto.

The same principle shall apply to added Members of Faculties.

CHAPTER III.

THE FACULTIES.

1. There shall be five Faculties, namely: (1) Arts, (2) Science, (3) Law, (4) Medicine, and (5) Engineering.

A member of the Senate may belong to one or to two of the Faculties, but not to more than two, and need not necessarily belong to any.

2. Appointments to the Faculties shall be made by the Senate at the Annual Meeting. The Syndicate shall, in the first instance, draw up a list of Fellows whom they recommend for appointment to the various Faculties. They shall ordinarily recommend a Fellow for appointment to one Faculty only, but may recommend a Fellow for appointment to two Faculties: Provided that in the latter case Fellows so recommended shall at no time exceed twenty. This list shall be circulated among the members of the Senate by the Registrar not less than twelve clear days before the meeting. Any member of the Senate may then propose additional names for any of the Faculties, which must be sent to the Registrar four clear days before the meeting. These names, together with the original list, shall be circulated among the members of the Senate two clear days before the meeting and no additional names shall be received. The entire list shall be voted on, Faculty by Faculty and every member shall be declared to be appointed who obtains votes from a majority

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of the members of the Senate voting for the Faculty under appointment. If any Fellow be appointed to more than two, he must, on receiving intimation, declare to which Faculties he accepts appointment.

3. Between the dates of the Annual Meetings of the Senate the Syndicate shall have power to distribute any newly appointed Fellows to their appropriate Faculties.

4. Each Faculty shall elect its Dean annually from its own number as soon as its members have been appointed.

If any Faculty omits to elect a Dean within one month of the Annual Meeting of the Senate, or if, in the event of the office of Dean being vacated, it fails to elect a new Dean within one month of the occurrence of the vacancy, the Vice-Chancellor may appoint a Dean. The Dean shall always be one of the Fellows belonging to the Faculty.

5. Each Faculty shall have the power to add to its own body a number of Graduates in that Faculty and other persons possessing special knowledge of the subjects of study represented by that Faculty, provided the number of members thus added shall not exceed half the number of Fellows appointed to that Faculty at the Annual Meeting of the Senate and shall in no case exceed ten. A person may belong to more than one Faculty as added member.

Act VIII of 1904, sec. 14 (2) (*b*).

6. Such added members shall be elected annually at a special meeting of the Faculty called for the purpose, and the election shall take place in the following manner :—

(*a*) The Dean shall as soon as possible after the Annual Meeting of the Senate convene a special meeting for the election of added members.

(*b*) Each Fellow on the Faculty will on receipt of the notice of the meeting be entitled to propose the name of one person for appointment as an added member of the Faculty. Such proposal must be accompanied by a brief written statement of the special qualifications of his nominee, and must reach the Registrar seven clear days before the meeting.

(*c*) The Registrar shall cause a list of the nominees and the statements concerning them to be printed and forwarded to the Fellows concerned, four clear days before the meeting.

(*d*) The voting shall be by ballot, and each Fellow on the Faculty shall be entitled to give one vote and one vote only for a candidate, but no Fellow shall have more votes than there are appointments to be filled. If the number of nominees does not exceed the limit

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prescribed by Regulation 5, any candidate receiving the votes of a majority of the Fellows on the Faculty shall be held to be duly elected. If the number of nominees exceeds the above limit, those candidates shall be held to be duly elected who have obtained the highest number of votes for the number of appointments admissible, provided that, as before, each such candidate shall have secured the votes of a majority of the Fellows on the Faculty.

7. All members shall hold office till the next annual appointment of the Faculty by the Senate.

8. Added members shall have the right to take part in the ordinary business of the Faculty, and in any election of an Ordinary Fellow by the Faculty, but shall not be entitled to take part in the election of the Syndicate.

Act VIII of 1904, sec. 14 (3).

9. Every meeting of a Faculty shall be convened by the Dean, or in his absence, or when the office of Dean is vacant, by the Senior Ordinary Fellow belonging to the Faculty present in Calcutta.

10. The Dean, or in his absence, or when the office of Dean is vacant, the Senior Ordinary Fellow belonging to the Faculty present in Calcutta, shall convene a meeting of the Faculty on the requisition of any three members.

11. Three clear days' notice shall be given of ordinary meetings of the Faculties. In the case of elections of members of the Syndicate, Fellows, added members, and Boards of Studies, fifteen clear days' notice shall be given.

12. The quorum for the Faculty of Arts shall be ten, and for any other Faculty three.

13. Two or more Faculties may be called upon by the Senate or the Syndicate to meet together for the disposal of any questions affecting more than one Faculty. In such cases the joint meeting shall elect its own Chairman.

14. The quorum of a joint Faculty meeting must include a full quorum of each Faculty represented, no member present being counted on more than one separate quorum.

15. It shall be the duty of a Facutly to cor sider and report on all matters referred to it by the Syndicate or the Senate, and a Faculty shall be at liberty to make recommendations to the Syndicate in all matters relating to the organization of University Examinations Teaching, and Research in the Studies or subjects with which it is concerned, and to propose Regulations relating to these matters for the consideration of the Syndicate.

16 All elections shall be conducted in the same manner as those in the Senate, except as otherwise provided.

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17. Within two weeks after a meeting of a Faculty, a draft of the Minutes of such meeting shall be submitted to the Chairman and attested by him. The Minutes shall then be printed and circulated to all members of the Faculty, and such of them as were present shall, within a fortnight of the issue of the Minutes, communicate to the Registrar any exceptions they may take to the correctness thereof. The Minutes and the exceptions taken, if any, shall be laid before the next meeting of the Faculty, and the Minutes in their final form shall then be confirmed. Once every twelve months, or at such other intervals as the Senate shall direct, the Syndicate shall cause the Minutes of the meetings of each Faculty to be printed and a copy thereof to be forwarded to each member of the Faculty concerned.

18. The rules for Debate laid down in the Senate Regulations shall apply to the Faculties as far as is practicable, but the Chairman may relax their operation at his discretion.

19. The Dean shall ordinarily preside at meetings of a Faculty, and in the absence of the Dean the members present shall elect a Chairman.

CHAPTER IV.

THE SYNDICATE.

1. The executive government of the University is vested in the Syndicate, which shall consist of the Vice-Chancellor of the University as Chairman, and the Director of Public Instruction to the Government of Bengal for the time being as *ex-officio* member, and 15 of the *ex-officio* or Ordinary Fellows of the University, who shall be elected for a period of one year, partly by the Senate and partly by the Faculties, as follows :—

Act VIII of 1904, sec. 15 (2).

Four by the Senate.
Four by the Faculty of Arts.
Two by the Faculty of Science.
Two by the Faculty of Law.
Two by the Faculty of Medicine.
One by the Faculty of Engineering.

The Syndics elected by any Faculty must be Fellows belonging to that Faculty.

2. The election by the Faculties shall take place at special meetings not less than three weeks before the Annual Meeting of the Senate. Notice of such meetings shall be issued by the Registrar not less than fifteen clear days before the appointed date. Each Fellow on the Faculty will, on receipt of the notice,

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be entitled to propose the name of one person for appointment as member of the Syndicate. Such proposal must reach the Registrar seven clear days before the meeting. The Registrar shall cause a list of the nominees to be printed and forwarded to the Fellows concerned four clear days before the meeting. In any contested election the voting shall be by ballot and the procedure shall be the same as that laid down in paragraphs 63-65 of the Senate Regulations. As soon as members have been elected by any Faculty their names shall be notified by the Registrar to all members of the Senate.

3. The election by the Senate shall take place at the Annual Meeting. Not less than seven days before the meeting the names of members who are proposed by any Fellows for election shall be submitted in writing to the Registrar, who shall circulate the names to the members of the Senate at least four clear days before the meeting.

4. Of the fifteen members of the Syndicate so elected at least seven shall be either Heads of or Professors in Colleges affiliated to the University, and of these Syndics at least two shall be elected by the Senate and at least five by the various Faculties :—

Act VIII of 1904, sec. 15 (2).

Three by the Faculty of Arts.
One by the Faculty of Science.
One by the Faculty of Medicine.

In any meeting for election such Syndics to the stated minimum number shall be elected first.

Fellows qualified for election under this Regulation are not debarred from election to the remaining places on the Syndicate.

5. If in the case of any election of a Fellow to the Syndicate the question is raised whether any person so elected is or is not a Professor within section 15, subsection (2) of the Indian Universities Act, the question shall be decided by the Senate.

Act VIII of 1904, sec. 15 (3).

6. The Syndicate shall meet ordinarily once a month, and at other times when convened by the Vice-Chancellor, or in his absence from Calcutta, or when the office of Vice-Chancellor should happen to be vacant, by the Senior Member of the Syndicate present in Calcutta. Whenever an emergency arises and there is not time to summon a meeting of the Syndicate, the Vice-Chancellor may take such immediate action as he deems necessary. The nature of the emergency and the action taken to meet it shall be reported by the Registrar at the next meeting of the Syndicate.

7. The Syndicate shall have power to appoint committees from among its own members, and to add to such committees any Ordinary Fellow of the University and any added member of

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a Faculty. The reports of such committees must be considered by the Syndicate as a whole, before being published or acted upon.

8. All members of the Syndicate must ordinarily be resident in or near Calcutta. If any member is temporarily absent from his residence, the Vice-Chancellor or the Dean of his Faculty, as the case may be, may appoint a member possessing the necessary qualifications to officiate during his absence. Should the period of absence exceed three months, the Vice-Chancellor may declare his place vacant.

9. On every vacancy in the Syndicate caused by death or resignation, or otherwise, the Senate or the Faculty, as the case may be, shall proceed to elect a new member for the remainder of the term for which the original member had been elected.

10. If the Senate or the Faculty omits to elect a member of the Syndicate within one month after a vacancy occurs, the Vice-Chancellor may appoint a person possessing the necessary qualifications.

11. Seven members of the Syndicate shall constitute a quorum, and all questions shall be decided by a majority of the votes of the members present. The Vice-Chancellor, or, in his absence, the Senior Fellow present, shall preside at all meetings of the Syndicate, and if the votes, including that of the President, are equally divided, the President shall have a casting vote.

12. It shall be the duty of the Syndicate to consider and report upon matters to be submitted to the Senate; to appoint, and if necessary to remove, the Examiners and all other officers of the University in regard to whom this power is conferred by the Regulations; to make rules for the conduct of examinations in conformity with the Regulations and to fix the times at which they shall be held; to recommend to the Senate the grant of degrees, honours and rewards; to administer the funds and to keep the accounts of the University; to correspond on the business of the University with the Government and all other authorities and persons; and, generally, to conduct the affairs of the University in accordance with the Act of Incorporation and the Indian Universities Act, the Regulations, and the Resolutions of the Senate and the Syndicate.

13. The Syndicate may from time to time recommend to the Senate such Regulations as may seem desirable.

14. Each Faculty shall report on any subject that may be referred to it by the Syndicate. Any Faculty, or any member or number of members of the Senate, may make any recommendation to the Syndicate and may propose any Regulation for the consideration of the Syndicate.

15. The decision of the Syndicate on any such recommendation or proposition, or on any matter whatever, may be brought before the Senate by any member of the Senate at one of its

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meetings, and the Senate may approve, revise, or modify any such decision or may direct the Syndicate to review it : provided that no matter directly concerning any particular Faculty shall be disposed of by the Syndicate or the Senate without having been referred to that Faculty for opinion.

16. All questions as to affiliation or disaffiliation of Colleges or the continuation of affiliation granted to Colleges, or to the courses of instruction which such Colleges will be allowed to adopt for the purposes of University examinations, or to the inspection of and report on the condition of Colleges, shall be dealt with by the Syndicate in accordance with sections 20, 21, 22, 23, and 24 of the Indian Universities Act.

17. All questions as to the recognition of or the withdrawal of recognition from, or the conditions required for the continuance of recognition of schools shall be dealt with by the Syndicate under the Regulations prepared under section 25 (2) (*o*) of the Indian Universities Act.

18. Whenever practicable, the Syndicate may, with the sanction of the Senate and from the funds of the University or any other funds placed at the disposal of the University for the purpose, institute scholarships for post-graduate study or studentships for research in literary or scientific subjects. The conditions governing their award and tenure shall be laid down from time to time by the Senate.

19. With a view to encourage research in vernacular literature and languages, and foster their growth, the Syndicate may, with the sanction of the Senate, provide grants, prizes or scholarships for—

(*a*) critical editions of early vernacular texts ;
(*b*) historical investigations of the origins of vernacular literatures and their early development ;
(*c*) philological investigations of Indian vernaculars and their dialects.

20. The minutes of the Syndicate having been duly confirmed shall be printed and circulated at once to the members of the Senate.

CHAPTER V.

BOARDS OF STUDIES.

1. There shall be Boards of Studies in the following branches of knowledge :—

1. English.
2. Greek, Latin, French, German and Armenian.
3. Sanskrit.

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4. Sanskritic Languages.
5. Hebrew.
6. Arabic, Persian and Urdu.
7. History.
8. Economics and Political Philosophy
9. Mental and Moral Philosophy.
10. Chemistry.
11. Experimental and Mathematical Physics.
12. Zoology.
13. Geology and Mineralogy.
14. Botany.
15. Physiology.
16. Experimental Psychology.
17. Mathematics.
18. Geography.
19. Teaching.
20. Law.
21. Medicine.
22. Engineering.

The Boards shall be respectively appointed by the Faculties as Follows :—

Boards 1—9 shall be appointed by the Faculty of Arts.
Boards 10—15 shall be appointed by the Faculty of Science.
Boards 16—19 shall be appointed by the Faculties of Arts and Science.
Board 20 shall be appointed by the Faculty of Law.
Board 21 shall be appointed by the Faculty of Medicine.
Board 22 shall be appointed by the Faculty of Engineering.

2. The members of a Board shall be teachers of or Examiners in, or other persons who have a special knowledge of, the subject or subjects with which the Board is concerned.

3. No Board shall consist of fewer than three or of more than twelve members.

4. The members of the respective Boards shall be appointed by the Faculty or Faculties as provided in Regulation 1, from among their own members (including added members), and shall severally hold office for one year from the date of appointment. They shall be eligible for re-appointment. No member shall belong to more than five Boards.

5. The Boards of Studies shall be elected annually at a special meeting of the Faculty called for the purpose, and the election shall take place in the following manner :—

(*a*) The Dean of each Faculty shall as soon as possible after the election of the added members convene a special meeting for the appointment of the Boards.

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(*b*) Each Member of a Faculty will, on receipt of a notice of the meeting, be entitled to propose not more than twelve members of the same Faculty for appointment to each of the Boards under that Faculty. The list of members proposed by him must reach the Registrar seven clear days before the meeting.

(*c*) The Registrar shall cause a list of the nominees to be printed and forwarded to the Fellows concerned, four clear days before the meeting.

(*d*) In any contested election the voting shall be by ballot, and the procedure laid down in the Senate Regulations 63—65 shall be followed.

6. Where two or more Faculties have to appoint a Board, they shall appoint the members thereof in the proportion assigned to them by the Syndicate previous to such appointment.

7. Each Board shall elect its own President. Every meeting of a Board shall be convened by its President or, in his absence, by the Senior Fellow belonging to that Board. Three members shall constitute a quorum. The President of a Board or, in his absence, the Senior Fellow belonging to the Board, shall convene a special meeting of the Board on the requisition of two or more members of the Board.

8. The duties of each Board shall be :—

(i) to recommend to the Syndicate courses of study for the various examinations of the University in the subjects with which the Board is concerned ;

(ii) to recommend to the Syndicate, for the guidance of teachers and students, books in which the prescribed subjects are suitably treated ; and to recommend text-books when such are required : provided that no book or text-book shall be recommended by a Board unless on the written report of some competent person who has read it, which report shall be forwarded to the Syndicate ;

(iii) to consider, at the request of the Syndicate, the reports of the Examiners in the subjects with which the Board is concerned, and to frame such recommendations regarding methods of teaching, study and examination as may seem necessary in the interests of education ;

(iv) to furnish the Syndicate with the names of persons competent to act as Examiners in the subjects with which the Board is concerned ; and

(v) to consider and report upon all such matters as may be referred to it by the Syndicate, the Faculties by which its members are appointed, or the Senate.

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9. Two or more Boards may be called upon by the Syndicate or the Senate to meet together for the disposal of any questions affecting more than one Board. In such cases the joint meeting shall elect its own President. The quorum of a joint Board meeting must include a full quorum of each Board represented, no member present being counted on more than one separate quorum.

10. All meetings of the Boards shall be convened through the Registrar, who will keep a record of the proceedings of the meetings.

11. Meetings of Boards shall be presided over by the President of the Board; in the absence of the President, the members present shall elect a Chairman.

CHAPTER VI.

BOARD OF ACCOUNTS.

1. A Board of Accounts, consisting of three Fellows, not being members of the Syndicate, shall be appointed by the Senate at its Annual Meeting.

2. The Board shall meet ordinarily once in three months, and at other times when convened by the Vice-Chancellor. The three members shall constitute a quorum.

3. The Board shall prepare the University Budget, examine and audit the University accounts and the accounts of the Endowments and Trust Funds, consider ways and means and the financial effects of any important measures in contemplation, and make recommendations, when necessary, to the Syndicate on all matters relating to the finances of the University. It shall also make an annual report to the Senate on the special features of the finances of the last preceding year.

4. Members of the Board shall hold office until the next Annual Meeting of the Senate. They shall be eligible for re-appointment at the expiration of their term of office. All vacancies in the Board occurring in the course of the year shall be filled up by the Syndicate.

CHAPTER VII.

REGISTRAR.

1. The Registrar shall be appointed by the Senate and only at an Annual Meeting. He shall be appointed for five years only,

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but at the end of every such term he may be re-appointed. The term of office of the Registrar shall commence on the first day of April next following his election: Provided that the first appointment shall be made within six months after these Regulations come into effect. If a vacancy occurs in the office of Registrar between two Annual Meetings of the Senate, the Syndicate shall appoint a person to officiate until the first day of April following the next Annual Meeting.

2. The Registrar shall be a graduate of position with experience of University affairs. He shall be a whole-time officer. He may be a member of the Senate, but shall not be a member of the Syndicate. His salary shall be Rs. 800 per mensem, rising to Rs. 1,000 in five years by four annual increments of Rs. 50.

3. It shall be competent to the Syndicate to grant to the Registrar, on full pay, leave of absence for one month in a year, or for an accumulated period not exceeding four months in five years. It shall also be competent to the Syndicate to grant him, on half pay, leave of absence which may be added to the period of leave on full pay for a period not exceeding eight months in five years.

The Syndicate shall make arrangements for the discharge of his duties during his absence.

4. The duties of the Registrar shall be as follows :—

(*a*) To be the custodian of the Records, Library, Common Seal, and such other property of the University as the Syndicate shall commit to his charge.

(*b*) To act as Secretary to the Syndicate and to attend all Meetings of the Senate, Faculties, Syndicate, Boards of Studies, Board of Accounts, Boards of Examiners, and any Committees appointed by the Senate, the Faculties, the Syndicate, or any of the Boards, and to keep Minutes thereof.

(*c*) To conduct the official correspondence of the Syndicate and the Senate.

(*d*) To issue all notices convening Meetings of the Senate, Faculties, Syndicate, Boards of Studies, Board of Accounts, Boards of Examiners, and any Committees appointed by the Senate, the Faculties, the Syndicate, or any of the Boards.

(*e*) To perform such other work as may be, from time to time, prescribed by the Syndicate, and generally to render such assistance as may be desired by the Vice-Chancellor in the performance of his official duties.

5. It shall be competent to the Syndicate to grant to the Registrar a gratuity or pension regulated as follows :—

(*a*) After a service of less than ten years, a gratuity not

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exceeding one month's salary for each completed year of service.

(*b*) After a service of not less than ten years, up to 25 years, a pension not exceeding one-sixtieth of the average salary (*i.e.*, the average calculated upon the last three years of service) multiplied by the number of years of completed service. The pension shall in no case exceed Rs. 5,000 per annum.

6. In case of misconduct or neglect of duty, the Registrar shall be liable to suspension by the Syndicate, and to dismissal by the Senate on the report of the Syndicate.

7. There shall be a permanent Assistant Registrar, who shall be a graduate of the Calcutta University, and a permanent staff of subordinate assistants and servants. The Syndicate shall have power to appoint them, to dismiss them for misconduct or neglect of duty, to dispense with their services for any sufficient reason, and to determine their number and scale of pay. It shall be competent to the Syndicate to grant them gratuities or pensions regulated as in paragraph 5. It shall also be competent to the Syndicate to grant them, on full pay, leave of absence for one month for every eleven completed months of duty, the amount of such leave admissible at one time being limited to three months. It shall further be competent to the Syndicate to grant them, on half pay, leave of absence on medical certificate, for a period not exceeding three months at a time, nor exceeding six months in five years.

CHAPTER VIII.

INSPECTOR OF COLLEGES.

1. For the purpose of inspecting affiliated Colleges a salaried Inspector shall be appointed. The appointment shall be made by the Senate and only at an Annual Meeting, and shall be subject to the approval of Government. He shall be appointed in the first instance for five years, but at the end of every such term he may be re-appointed. If a vacancy occurs in the office of Inspector, the Syndicate shall appoint a person to officiate until the next Annual Meeting of the Senate.

2. The Inspector of Colleges shall be a person of high academic standing and one possessing some experience of Indian Colleges. He shall be a whole-time officer of the University. His pay, leave and pension shall be on the same terms and conditions as those of the Registrar. He may be a Fellow of the University

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but must not be a member of the Syndicate. The duties of the Inspector of Colleges shall be :—

(*a*) to report on Colleges applying for affiliation ;
(*b*) to inspect affiliated Colleges ; and
(*c*) to inspect such schools as may from time to time be indicated by the Syndicate.

CHAPTER IX.

UNIVERSITY PROFESSORS.

1. When the funds of the University permit, the Senate with the previous consent of the Governor-General in Council shall found such Professorships as it may think fit, prescribe the conditions on which they shall be tenable, and provide in connection therewith lecture-rooms, libraries, museums, laboratories, workshops and other facilities for teaching and research.

2. The Senate shall likewise found and endow Professorships on particular subjects, from funds specially given or bequeathed for the endowment of such Professorships, or, if it thinks fit, accept endowments of such Professorships made by individual or corporate donors.

3. The Senate shall appoint and shall, subject to the conditions annexed to the tenure of any Professorship, have power to remove the Professors of the University. The Senate shall in the same manner appoint Assistant Professors, prescribe their duties and remuneration, and have power to dismiss them, if necessary.

4. Demonstrators and other Assistants shall from time to time be assigned to Professors and Assistant Professors, subject to such conditions with regard to manner of appointment, tenure of office, duties and remuneration as shall be prescribed by the Senate.

5. The Senate shall from time to time make rules fixing the fees, if any, to be paid by the students attending the classes of Professors and Assistant Professors, and the money thus collected in fees shall be the property of the University.

6. Professors and Assistant Professors shall lecture or otherwise teach in such places as shall be from time to time determined by the Senate.

7. The Senate shall make rules for the retirement of, as well as the grant of bonuses and pensions to, Professors, Assistant Professors, Demonstrators and other Assistants.

8. In appointing a Professor or Assistant Professor of the

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University the Senate shall specify the subject, that is to say, the branch or branches of knowledge for which he is appointed. He shall be authorised to lecture only in the subject or subjects indicated.

9. Endowed Professorships already accepted by the Senate shall, subject to the conditions of the endowment, be governed by these Regulations.

10. No University Professor shall be appointed without the sanction of the Governor-General in Council.

CHAPTER X.

UNIVERSITY READERS.

1. A certain sum, whenever practicable, shall be set apart annually from the University income or from any funds specially provided for the purpose by Government or other donors, for the purpose of providing special courses of lectures on particular subjects. These lectures shall be delivered generally during the cold weather months, and will be intended mainly for the benefit of graduates engaged in research work or of those who wish to prosecute special studies. The lecturers delivering such courses of lectures shall be called University Readers.

2. The appointment of a Reader in any subject shall be made by the Senate on the recommendation of the Syndicate.

3. Readers shall lecture in such places as may be from time to time determined by the Senate.

4. The fee for a course of lectures under Section 1 shall from time to time be fixed by the Syndicate, and the money thus collected in fees shall be the property of the University.

5. A Reader appointed under Section 1 shall ordinarily receive an honorarium of Rs. 2,000 for a course of lectures, but in special cases this fee may be increased.

6. The Senate on the recommendation of the Syndicate shall from time to time allot funds to meet the remuneration of Demonstrators and Assistants as well as any general expenditure which may be incurred in connection with these lectures.

7. Courses of lectures delivered under Regulation 1 shall be printed and published at the expense of the University.

8. No University Reader shall be appointed without the sanction of the Governor-General in Council.

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CHAPTER XI.

UNIVERSITY LECTURERS.

1. The University shall provide for post-graduate teaching, study, and research in the Faculties of Arts and Science.

2. The Heads of Colleges affiliated to the University shall from time to time submit to the Registrar the names of Professors in their respective Colleges who are prepared to deliver lectures on and conduct classes for research or advanced work for post-graduate courses of study in Arts or Science.

Any five members of the Faculty of Arts or of the Faculty of Science shall conjointly have power to submit to the Registrar the name of a candidate not connected with any affiliated college for this purpose.

3. The Syndicate shall consider the names so submitted and shall recommend to the Senate Lecturers for the various post-graduate courses of study. In recommending Lecturers for the various courses, the Syndicate shall have regard to (*a*) the qualifications of the applicant, (*b*) the desirability of avoiding an unnecessary multiplication of lecturers on the same subject, and (*c*) in the case of Science subjects, the equipment for advanced practical work which can be provided.

In special cases the Syndicate may directly propose the appointment of any competent person as a University Lecturer, and may also recommend that such Lecturer be suitably remunerated from University Funds.

4. The Senate shall have power, upon the recommendation of the Syndicate as aforesaid, to appoint Lecturers, who shall be called University Lecturers.

5. University Lecturers shall in the first instance be appointed for two years, but they shall be eligible for re-appointment.

6. Where an Institution is completely affiliated in any subject for the M.A. or M.Sc. courses, the College Professors lecturing on that subject shall enjoy the title and status of University Lecturers.

7. University Lectures and classes for advanced work or research shall be open to all Graduates of Indian Universities who have taken Honours in that particular subject, and to other persons with the permission of the Lecturer.

8. Such lectures shall be delivered and classes held in the College to which the Lecturer belongs, or in such other place as the Syndicate in consultation with the Lecturer may determine.

The fee for a course of University lectures shall be determined by the Syndicate, and the money thus collected in fees for any particular course shall, where the Lecturer is a Professor of a

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College, be the property of the College to which the Lecturer belongs and shall be paid to the Lecturer himself in any other case. If however a College is completely affiliated in any subject, the fees for the course shall be determined by that College.

9. Every University Lecturer must deliver at least 30 lectures in the course of the academical year.

10. If a Lectureship becomes vacant before the expiry of the term of appointment, the Syndicate may, on the application of the College in which the Lectureship is held, appoint a temporary Lecturer for the remainder of the original term.

11. If a Lecturer, after delivering his lectures, is desirous of publishing them or their substance he shall submit his lectures or their substance, to the Syndicate, and the Syndicate, if satisfied that the lectures or their substance should be published, shall have power to help him in the publication thereof out of the funds of the University.

12. No University Lecturer shall be appointed without the sanction of the Governor-General in Council.

CHAPTER XII.

ELECTION OF FELLOWS BY FACULTIES.

The following procedure shall be adopted in the election of Ordinary Fellows by Faculties under section 9 of the Indian Universities Act :—

1. Once in every year, on such date as the Chancellor may appoint in this behalf, there shall, if necessary, be an election to fill any vacancy among the Ordinary Fellows elected by the Faculties. Such election shall take place at special meetings of the Faculties convened for the purpose.

Act VIII of 1904, sec. 9 (*1*).

2. An election under Regulation 1 shall be held, subject to such directions prescribing the qualifications of the persons to be elected as may, from time to time, be given by the Chancellor, with a view to secure the return of duly qualified persons and the fair representation of different branches of study in the Senate.

Act VIII of 1904, sec. 9 (*2*).

3. Elections of Ordinary Fellows by the Faculties shall be made in such manner as to secure that not less than two-fifths of the whole number of Fellows elected by the Faculties shall be persons following the profession of education.

Act VIII of 1904, sec. 6 (*4*).

4. Names of candidates fulfilling the conditions prescribed under Regulation 2 must be proposed in writing by a Member

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of the Faculty which is to make the election. The nomination shall be in a form to be prescribed from time to time by the Syndicate, and shall reach the Registrar seven clear days before the date fixed for the election.

Each nomination must be accompanied by a brief written statement of the special qualifications of the nominee.

The Registrar shall cause a list of the nominees and the statements concerning them to be printed and forwarded to the Fellows concerned four clear days before the meeting.

5. The elections shall be held in accordance with Regulations 63, 64 and 65 of the Senate Regulations.

Act VIII of 1904, sec. (3).

6. The election of any Fellow by a Faculty shall be subject to the approval of the Chancellor.

7. If upon the election of an Ordinary Fellow by a Faculty objection is taken that the election has not been held in accordance with the Regulations framed for the purpose or the directions given by the Chancellor, written notice of such objection shall be given to the Registrar within three days after the election; such notice shall specify the ground upon which the validity of the election is questioned. The Registrar shall place the notice before the Vice-Chancellor or the Senior Ordinary Fellow of the Senate, as the case may be, who shall thereupon convene a meeting of the Senate for the consideration of the matter on as early a date as practicable. The Senate, if satisfied that the election has not been held in substantial compliance with the Regulations or the directions given by the Chancellor under section 9, sub-section (2), may direct the Faculty to hold a new election or may give such other directions as may be necessary in the circumstances.

If notice of objection is given to the Registrar as provided by this Regulation, the name of the Fellow elected by the Faculty shall not be submitted to the Chancellor for approval under section 6, sub-section (3) of the Indian Universities Act till the matter has been considered by the Senate.

CHAPTER XIII.

ELECTION OF FELLOWS BY GRADUATES.

The following procedure shall be adopted in the Election of Ordinary Fellows by Registered Graduates under section 7 of the Indian Universities Act :—

1. Once in every year, on such date as the Chancellor

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may appoint in this behalf, there shall, if necessary, be an election to fill any vacancy among the Ordinary Fellows to be elected by Registered Graduates.

Act VIII of 1904, sec. 7 (1).

2. No person, unless his name has been entered in the register of Graduates and unless he has paid the fee for the year in which the election takes place, shall be qualified to vote or to be elected at any election held under Regulation 1.

Act VIII of 1904, sec. 7 (4).

3. Intimation of the date fixed for election shall be sent to Registered Graduates at least thirty-five clear days in advance, and each Registered Graduate will, on receipt of the notice, be entitled to propose the name of one person for appointment as a Fellow. Such proposal must be accompanied by a brief written statement of the special qualifications of his nominee, and must reach the Registrar twenty-one clear days before the date fixed for election. The Registrar shall cause a list of the nominees and of the statements to be printed and forwarded to the Registered Graduates, seventeen clear days before the date fixed for election.

4. Each voter shall have only one vote for each vacancy which is to be filled up and can give only one vote to any one candidate.

5. The votes shall be recorded and attested in such manner as the Syndicate may from time to time determine. The votes shall be recorded before the Registrar or reach him by such time on the day of election as the Syndicate may prescribe.

6. Those who obtain the highest number of votes will be declared elected. In the event of there being any tie between two or more candidates necessitating further selection, their names shall be reported to the Chancellor with whom the final selection shall rest.

7. The election of any Ordinary Fellow by the Registered Graduates shall be subject to the approval of the Chancellor.

Act VIII of 1904, sec. 6 (3).

8. If upon the election of an Ordinary Fellow by Registered Graduates, objection is taken that the election has not been held in accordance with the Regulations framed for the purpose, written notice of such objection shall be given to the Registrar within three days after the election. Such notice shall specify the ground upon which the validity of the election is questioned. The Registrar shall place the notice before the Vice-Chancellor, or the Senior Member of the Syndicate, as the case may be, who shall thereupon convene a meeting of the Syndicate for the consideration of the matter on as early a date as practicable. The Syndicate, if satisfied that the election has not been held in substantial compliance with the Regulations, may direct the Graduates to hold a new election, or may give such other direction as may be necessary in the circumstances.

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If notice of objection is given to the Registrar as provided by this Regulation, the name of the Fellow elected by the Graduates shall not be submitted to the Chancellor for approval under section 6, sub-section (*3*) of the Indian Universities Act till the matter has been considered by the Syndicate.

CHAPTER XIV.

REGISTER OF GRADUATES.

1. The Register of Graduates to be kept under section 7 (*2*) of the Indian Universities Act shall be in such form as the Syndicate may from time to time prescribe.

2. The initial fee payable by a Graduate for having his name entered on the Register shall be Rs. 10.

3. The fee payable by a Graduate for having his name retained on the Register shall be Rs. 10 a year. The annual fee shall cover the period from the 1st of April in the year in which it is paid till the 31st of March in the year following. Till such fee has been paid no Graduate shall be entitled to take part in any election or to enjoy any of the privileges conferred by these Regulations.

4. When a Graduate applies to have his name entered on the Register after the expiry of the limited time prescribed under section 7, sub-section (*2*) of the Indian Universities Act he shall be liable to pay in addition to the inital fee, a further sum of Rs. 10.

5. A Graduate whose name has been already entered on the Register may at any time compound for all subsequent payments of the annual fee by paying the sum of Rs. 150.

Act VIII of 1904, sec. 7 (*3*).

6. The name of any Graduate entered on the Register shall, if the amount of the annual fee is not paid by the 30th of June, be removed therefrom, but shall at any time be re-entered on payment of all arrears.

Act VIII of 1904, sec. 7 (*3*).

7. The day of the Convocation on which a person is entitled to be admitted to his degree, shall be deemed the day on which he has graduated or taken his degree.

8. Registered Graduates shall have, besides the right of electing Ordinary Fellows, the following privileges :—

Act VIII of 1904, sec. 7 (*5*).

(*a*) They shall be entitled to the use of the University Library on such special terms as may from time to time be prescribed by the Syndicate.

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(*b*) They shall be supplied with a copy of the University Calendar or such portions of it as the Syndicate may from time to time decide.

(*c*) They shall be admitted free to all lectures delivered by University Professors and Readers.

(*d*) They shall have priority of admission to the Convocation over unregistered Graduates.

CHAPTER XV.

REGISTER OF UNIVERSITY STUDENTS.

1. The Registrar shall maintain a register of all students of the University, including graduates reading for a higher examination.

In this Register shall be entered the names of such persons only as have passed either the Entrance or the Matriculation Examination subject to the exception mentioned in Regulation 9 of this Chapter. There shall be recorded under the name of each registered student, the dates of admission to, and of leaving, any affiliated College, every pass or failure in a University examination with his roll number, every University scholarship, medal or prize won by the student, and every degree taken.

2. No person shall be deemed a "University student" unless and until his name has been duly entered in the Register, and none but "University students" shall be eligible for admission to any University Examination other than the Entrance or Matriculation.

3. The Principal of every affiliated College shall forward to the Registrar the name of every student of the College within fourteen days of his admission. The Principal shall at the same time, if necessary, forward the registration fee required by section 6.

When a student's name has been removed from the books of a College for any reason other than his having been sent up to a University Examination, the fact of its removal shall be immediately reported to the Registrar.

4. In the case of a student seeking matriculation the Principal of the College to which he has been admitted shall inform the Registrar of the date on which such student passed the Matriculation Examination and quote his roll number.

In the case of a registered student joining a College, the Principal shall quote such student's registered number.

5. On registration as a matriculated student every student shall be informed through his Principal of the registered number

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under which his name has been entered in the register, and that number shall be quoted in all subsequent reports concerning that student, and in all applications by that student to be admitted to a University Examination.

6. On matriculation every student shall be required to pay to the University a registration fee of two rupees, when his name is sent in by the Principal.

No further fee for registration shall be charged, unless a student's name is, on non-payment of fees, absence without notice or expulsion, struck off the books of a College, in which case he shall pay one rupee to have his name re-entered in the University Register.

7. All applications for admission to University Examinations shall be liable to be scrutinised by comparison with the University Register, and the Registrar may refuse any application of any candidate about whom complete particulars have not been reported, until he has forwarded through his Principal a complete statement of the particulars which have not been properly reported.

8. Any registered student may at any time receive a certified copy of all entries under his name on payment of three rupees.

9. Any person who applies for special permission to appear in an examination under the Regulations relating to non-Collegiate students if he has been at any time matriculated in the University, shall quote his registered number, or if he has not been so matriculated, shall register his name as a matriculated student, paying the usual registration fee before he appears in the examination to which he seeks admission.

CHAPTER XVI.

NON-COLLEGIATE STUDENTS.

1. No person who cannot produce a certificate from a College affiliated to the University, to the effect that he has completed the course of instruction prescribed by the Regulations, shall ordinarily be admitted as a candidate at any University Examination, other than an examination for Matriculation.

2. Exception may be made in certain cases on the recommendation of the Syndicate, by special order of the Senate. In each case the recommendation must state special reasons why the privilege should be granted. A certificate shall be produced in such form as may be prescribed by the Syndicate.

Act VIII of 1904, sec. 19.

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3. Except in very special cases no person shall be admitted under the preceding Regulation who has been enrolled as a regular student of a College during the twelve months previous to the date of the Examination at which he applies for permission to appear.

4. Before a candidate is permitted to present himself in any science subject for which a practical course is necessary under the Regulations, he shall produce a certificate from the Principal of an affiliated College or some other authority approved by the Syndicate, to the effect that he has taken such a course in his laboratory.

5. Employment as a teacher shall not be regarded as a ground of recommendation unless the applicant has been employed for at least three years preceding the Examination in the exercise of his profession in (1) a College affiliated to the University, or (2) a School recognized by the University as competent to send up candidates for the Matriculation Examination, or (3) any other School approved for the present purpose by the Syndicate.

6. Laboratory Assistants and Demonstrators and Librarians of Affiliated Colleges shall be treated as teachers.

7. The Syndicate shall have power in any case to admit to any University Examination in any Faculty any person who shall present a certificate from any Institution authorised to grant certificates by the Governor-General of India in Council, or by a Local Government, or from such other Institutions as may be from time to time recognised for the purpose by the Syndicate, showing that he has attended courses of study, passed examinations, or taken degrees equivalent to those which are required in the case of students of the Calcutta University.

8. All non-Collegiate students before they are admitted to a University Examination shall satisfy the Syndicate by the production of a certificate as to (*a*) their good conduct, and (*b*) their diligent and regular study.

CHAPTER XVII.

FEMALE CANDIDATES.

General.

1. Female candidates, if they so desire, shall be examined in a separate place under the superintendence of ladies.

2. No female candidate shall be admitted to any examination without presenting a certificate in such form as may be prescribed by the Syndicate.

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3. All the Regulations for the examination of candidates shall apply to female candidates except in so far as they are modified in the following Regulations :—

Matriculation Examination.

Female candidates shall be allowed to take up any language accepted by the Syndicate as a second language.

Intermediate Examination in Arts or Science.

(i) Female candidates may be admitted to this Examination without studying in an affiliated College, and Regulations 4 and 8 of Chapter XVI shall apply to them. No candidate, however, shall be allowed to present herself for this Examination until two years have elapsed from the time of her passing the Matriculation Examination.

(ii) Female candidates shall be allowed to take up any language accepted by the Syndicate as a second language.

B.A. Examination.

Female candidates may be admitted to this Examination without studying in any affiliated College, and Regulations 4 and 8 of Chapter XVI shall apply to them. But no candidate shall be allowed to present herself for this Examination until two years have elapsed from the time of her passing the Intermediate Examination in Arts.

CHAPTER XVIII.

AFFILIATION AND DISAFFILIATION OF COLLEGES.

1. Colleges or departments of Colleges may be affiliated in Arts, or a department of Arts, and similarly in Science, Law, Medicine and Engineering. The affiliation shall be given specifically for each separate subject and each separate standard in each of the Faculties.

2. The privilege of affiliation can only be conferred by the Government on the report of the Syndicate and the Senate. All applications for affiliation must be addressed through the Registrar to the Syndicate.

3. Only Colleges working within the territorial limits defined by the Governor-General in Council under section 27 of the

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Indian Universities Act, 1904, which are assigned to this University, will be affiliated.

4. In the case of a Government College, application must be made by the Director of Public Instruction of the province in which the Institution is situated.

In the case of any other Institution application must be made by the Governing Body and submitted through the chief controlling authority, if any.

5. Every application must be countersigned by two Members of the Senate.

6. A College applying for affiliation to the University, shall send a letter of application to the Registrar, and shall satisfy the Syndicate—

Act VIII of 1904, sec. 21 (*1*).

(*a*) that the College is to be under the management of a regularly constituted Governing Body on which the teaching staff is represented;

(*b*) that the character and qualifications of the teaching staff and the conditions governing their appointment and tenure of office are such as to make due provision for the courses of instruction to be undertaken by the College;

(*c*) that the buildings in which the College is to be located are suitable, and that provision will be made, in conformity with the Regulations, for the residence, in the College or in lodgings approved by the College, of students not residing with their parents or guardians, and for the supervision and physical welfare of students;

(*d*) that due provision has been or will be made for a library;

(*e*) where affiliation is sought in any branch of experimental science, that arrangements have been or will be made, in conformity with the Regulations, for imparting instruction in that branch of science in a properly equipped laboratory or museum;

(*f*) that due provision will, so far as circumstances may permit, be made for the residence of the Head of the College and some members of the teaching staff in or near the College or the place provided for the residence of students;

(*g*) that the financial resources of the College are such as to make due provision for its continued maintenance;

(*h*) that the affiliation of the College, having regard to the provision made for students by other Colleges in the same neighbourhood, will not be injurious to the interests of education or discipline; and

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(*i*) that the College rules fixing the fees (if any) to be paid by the students have not been so framed as to involve such competition with any existing College in the same neighbourhood as would be injurious to the interests of education.

The application shall further contain an assurance that after the College is affiliated any transference of management and all changes in the teaching staff shall be forthwith reported to the Syndicate.

The application shall also contain an assurance that, except with the special permission of the Syndicate, no College professor or lecturer will be allowed to lecture to a class or section of a class which has on its rolls more than 150 students, and if two classes are combined, the joint number on the rolls shall likewise not exceed 150.

If any application for special permission is made, the Syndicate in dealing with it shall have regard to—

(*a*) the nature of the subject;
(*b*) the structure of the lecture-room and its accommodation;
(*c*) the qualifications of the lecturer.

In the case of every application for affiliation of a College in any subject for the Examination of the degree of Master in the Faculty of Arts or of Science, a guarantee must be given that the course in which affiliation is sought will be adequately maintained for a period of at last four years.

Act VIII of 1904, sec. 21 (*2*), (*3*) and (*4*).

7. On receipt of a letter of application the Syndicate shall—

(*a*) direct a local inquiry to be made by a competent person authorized by the Syndicate in this behalf;
(*b*) satisfy themselves that there is in the College building adequate accommodation both as regards the number of class-rooms, and the floor space and cubic space in each classroom;
(*c*) make such further inquiry as may appear to them to be necessary; and
(*d*) report to the Senate on the question whether the application should be granted or refused, either in whole or in part, embodying in such report the result of any inquiry under clauses (*a*), (*b*) and (*c*).

And the Senate shall after such further inquiry (if any) as may appear to them to be necessary, record their opinion on the matter.

The Registrar shall submit the application and all proceedings

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of the Syndicate and Senate relating thereto to the Government, who, after such further inquiry as may appear to them to be necessary, shall grant or refuse the application or any part thereof.

When the application or any part thereof is granted, the order of Government shall specify the courses of instruction in respect of which the College is affiliated; and when the application or any part thereof is refused, the grounds of such refusal shall be stated.

Act VIII of 1904, sec. 21 (5).

8. An application for affiliation may be withdrawn at any time before an order has been passed on the application by the Government.

Act VIII of 1904, sec. 22.

9. Where a College desires to add to the courses of instruction in respect of which it is affiliated, the procedure prescribed by Regulations 6 and 7 shall, so far as may be, be followed.

Act VIII of 1904, sec. 23 (2).

10. As a condition of the continuance of affiliation, each affiliated College will be inspected from time to time by one or more competent persons authorized by the Syndicate in that behalf.

Act VIII of 1904, sec. 23 (3).

11. The Syndicate may call upon any College so inspected to take, within a specified period, such action as may appear to them to be necessary in respect of any matters referred to in Regulation 6.

12. The Senate may, on the recommendation of the Syndicate, submit for the orders of the Government at any time, a proposal for the withdrawal of the privileges of affiliation from any College.

The procedure shall be as follows :—

Act VIII of 1904, sec. 24 (1)—(6).

(*a*) A Member of the Syndicate who intends to move that the rights conferred on any College by affiliation be withdrawn, in whole or in part, shall give notice of his motion, and shall state in writing the grounds on which the motion is made.

(*b*) Before taking the said motion into consideration, the Syndicate shall send a copy of the notice and written statement mentioned in (*a*) to the Head of the College concerned, together with an intimation that any representation in writing submitted within a period specified in such intimation on behalf of the College will be considered by the Syndicate :

Provided that the period so specified may, if necessary, be extended, from time to time, by the Syndicate.

(*c*) On receipt of the representation or on expiration of the period referred to in (*b*), the Syndicate, after considering the notice of motion, statement and representation, and after such inspection by any competent person authorized by the Syndicate

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in this behalf, and such further inquiry as may appear to them to be necessary, shall make a report to the Senate.

(*d*) On receipt of the report under (*c*), the Senate shall, after such further inquiry (if any) as may appear to them to be necessary, record their opinion on the matter.

(*e*) The Registrar shall submit the proposal and all proceedings of the Syndicate and Senate relating thereto to the Government, who, after such further inquiry (if any) as may appear to them to be necessary, shall make such order as the circumstances may, in their opinion, require.

(*f*) Where by an order made under (*e*) the rights conferred by affiliation are withdrawn, in whole or in part, the grounds for such withdrawal shall be stated in the order.

13. If a College affiliated in any subject for the M.A. or M.Sc. standard fails to maintain adequately for a period of four years the course in that subject, proceedings shall be taken, under the preceding section, to withdraw from the College the privileges of affiliation in that subject.

14. Each affiliated College shall furnish such returns, reports, and other information as the Syndicate may require to enable them to judge of the efficiency of the College.

Act VIII of 1904, sec. 23 (*1*).

CHAPTER XIX.

CONDITIONS TO BE FULFILLED BY COLLEGES AFFILLIATED UNDER ACT II OF 1857.

1. Every College affiliated to the University before the passing of the Indian Universities Act shall be entitled to exercise the rights conferred upon it by affiliation, till such rights are withdrawn or restricted in the exercise of any power conferred by that Act or by the Act of Incorporation.

Act VIII of 1904, sec. 20.

For this purpose all Colleges affiliated up to the standard of the First Examination in Arts will be deemed qualified to impart instruction up to the standard of the Intermediate Examination in Arts, but not up to that of the Intermediate Examination in Science.

2. As soon as practicable, after the date on which these Regulations come into force, the Syndicate shall cause steps to be taken for the withdrawal of the rights conferred by affiliation from all Colleges situated beyond the territorial limits of the University as defined by the Governor-General in Council under section 27 of the Indian Universities Act.

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For this purpose, the Syndicate shall ascertain whether any such College is preparing students for any examination of this University; and the date on which the withdrawal of the rights conferred by affiliation will take effect as regards any particular College hall be so regulated as not to prejudice the right of any student to appear at the examination for which he is actually reading in that College.

3. As soon as practicable after the date on which these Regulations come into force, the Registrar shall forward a copy thereof to the authorities of each affiliated College situated within the territorial limits of the University as defined by the Governor-General in Council under section 27 of the Indian Universities Act, and invite them to furnish within three months (or such further time as may be prescribed in any case by the Syndicate) information upon the following points :—

Act VIII of 1904, sec. 23 (*1*).

(*a*) Whether the College is under the management of a regularly constituted governing body; if so, the names of its members, and its constitution.

(*b*) The names and qualifications of the teaching staff together with copies of their testimonials, and the conditions governing their appointment and tenure of office.

(*c*) The size and situation of the College buildings, including the floor space and cubic space in each class-room.

(*d*) Provision, if any, made for the residence of such of the students as do not reside with their parents or guardians.

(*e*) Provision made for the residence of the Head of the College and of any member of the teaching staff, in or near the College or the place provided for the residence of the students.

(*f*) Provision made for the supervision and physical welfare of the students.

(*g*) Provision for a library, and the facilities given to students to make use of the library.

(*h*) The courses of study, the subjects taught, the routine of work, and the arrangements for exercises and for tutorial assistance.

(*i*) The courses of study which the College proposes to undertake in accordance with these Regulations, and the provision which will be made for such courses.

(*j*) Where the College proposes to undertake instruction in any branch of experimental Science, what arrangements wil be made for imparting instruction in that branch of Science in a laboratory or museum,

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(i) by the delivery of lectures illustrated by experiments, and (ii) by enabling students to carry on practical work.

(*k*) The financial resources of the College.

(*l*) The College rules fixing the fees, if any.

4. If it appears in the case of any College that it has no regularly constituted governing body, or that it has a governing body upon which the teaching staff is not represented, the Syndicate shall call upon the chief controlling authority to place the College forthwith under the management of a regularly constituted governing body on which the teaching staff is represented.

5. The Syndicate shall obtain from each College an assurance—

(*a*) That any transference of management and all changes in the teaching staff will be forthwith reported to the Syndicate, and

(*b*) That from the beginning of the session following that in which these Regulations come into force, except with the special permission of the Syndicate, no Professor or Lecturer will be allowed to lecture to a class or section of a class which has on its rolls more than 150 students, and if two classes are combined the joint number on the rolls shall likewise not exceed 150.

6. The Syndicate shall cause each College referred to in Regulation 3 to be inspected in accordance with the Regulations framed in that behalf, and call upon the College inspected to take, within a specified period (which may be extended from time to time at the discretion of the Syndicate) such action as may appear to them to be necessary with a view to secure its efficiency.*

Act VIII of 1904, sec. 23 (*3*).

7. At the end of two years from the time when these Regulations come into force, the Syndicate shall submit to the Senate a report upon the condition of each affiliated college with a recommendation as to the subjects and standard in which such College shall be deemed to be affiliated. The matter shall be dealt with in accordance with the provisions of Section 24 of the Indian Universities Act, and a report submitted to the Government, who may make such order as the circumstances of each case may require.

8. Each affiliated College shall furnish such returns, reports and other information as the Syndicate may require to enable them to judge of the efficiency of the College.

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9. The preceding Regulations shall not apply to the School departments of affiliated Colleges.

CHAPTER XX.

INSPECTION OF AFFILIATED COLLEGES.

1. The inspection of Colleges shall be conducted jointly by the Inspector of Colleges and one or two other persons who shall from time to time be appointed by the Syndicate to assist in the inspection of a College or a group of Colleges.

In the case of inspection of Colleges affiliated in Arts or Science, the additional Inspector or Inspectors shall be so chosen that both branches of study are represented if necessary. In the case of Colleges affiliated in any branch of professional learning, the additional Inspector or Inspectors shall be specially qualified in that subject.

2. All Colleges shall be inspected once within eighteen months after the date when these Regulations come into operation. Thereafter, every College shall be inspected at least once a year.

3. The report of the Inspectors shall deal with the following among other matters :—

(*a*) The constitution of the Governing Body and the names of its members.

(*b*) The suitability of the buildings and their neighbourhood, the accommodation for the students in attendance, the furniture, the lighting, the ventilation of the rooms, the drainage of the surrounding premises, and the efficiency of the sanitary arrangements.

(*c*) The names and qualifications of the teaching staff, the conditions governing their appointment and tenure of office, and the changes in the staff during the preceding year.

(*d*) The provision made for the residence of the Head of the College and of the members of the teaching staff in or near the College, or the place provided for the residence of students.

(*e*) The adequacy of the Library, scientific apparatus, and other teaching appliances.

(*f*) The courses of study, the subjects taught, the number of lectures delivered in each subject, the routine of work and the arrangements for exercises and for tutorial assistance, and the facilities given to students to make use of the Library.

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(*g*) The adequacy of the teaching staff.
(*h*) The strictness with which the College registers are kept and the transfer rules observed.
(*i*) The average monthly roll-number and the daily attendance of students during the last twelve months, as compared with the previous year's.
(*j*) The results of University examinations.
(*k*) The state of discipline.
(*l*) The provision made for physical exercise.
(*m*) College clubs and other institutions for fostering Collegiate life.
(*n*) The extent and character of hostel accommodation, the degree of efficiency attained in the supervision of hostels and other lodgings for students; and the distance of such hostels and lodgings from the College premises.

4. The following books shall be kept by every College :—
(*a*) An admission register, in such form as the Syndicate may from time to time prescribe.
(*b*) An attendance register.
(*c*) A student's conduct register showing fines exacted and other punishments.
(*d*) A register of the results of periodical examinations and class exercises.
(*e*) A register of Transfer Certificates issued and received.
(*f*) A cash-book.
(*g*) A book containing the proceedings of the Governing Body.

5. All the accounts, books, and other records of a College shall at all times be open to inspection and examination by any person or persons who may be deputed by the Syndicate for the purpose, provided that any information obtained from the inspection of the accounts shall be deemed confidential.

6. No inspection or examination under these Regulations shall have reference to religious instruction.

7. Every college shall furnish annually a return in such form as the Syndicate may from time to time prescribe.

CHAPTER XXI.

RECOGNITION OF SCHOOLS AND WITHDRAWAL THEREOF.

1. A school situated within the local limits assigned to the University of Calcutta by the Governor-General in Council,

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under Section 27 of the Indian Universities Act, 1904, which is desirous of being recognised as a school competent to present candidates for the Matriculation Examination, shall send a letter of application to the Registrar.

2. The school shall furnish a preliminary statement showing—

(*a*) That the school is under the management of a regularly constituted committee on which the teaching staff is represented, that proper provision is made for the continuance of the existence of such committee, and that the rules are such that the committee can exercise a necessary amount of control over the working of the school.

(*b*) That the qualifications, character and experience of the Head Master and the rest of the teaching staff are satisfactory, that due provision is made in respect of the number of teachers, and otherwise for carrying on all the courses of instruction in which the school desires to be recognised by the University as competent to present candidates for the Matriculation Examination, and that the conditions governing the tenure of the office of the Head Master and his staff are such as to render proper continuity of work possible.

(*c*) That the buildings in which the school is carried on are adapted for the purposes of a school, and are in proper sanitary condition, that the surroundings are suitable, and that the arrangements made in the buildings and in the furnishing of them are not likely to injure in any way the eyesight and general health of the pupils.

(*d*) That the accommodation is sufficient for the classes under instruction in the school.

(*e*) That the sanitary conveniences attached to the school are adequate and are kept in good order.

(*f*) That arrangements are made for the supply of good drinking-water to the pupils, and that facilities are provided to allow them to partake of refreshments.

(*g*) That due provision is made for the maintenance of a library and for lending out appropriate books (not school text-books) for the use of pupils.

(*h*) That when recognition is sought in any branch of work, such as experimental science (1) which involves lectures which should be experimentally illustrated or (2) which involves the students themselves doing practical experimental work, the apparatus and the facilities provided for the purpose are sufficient to carry out these objects properly and fully.

(*i*) That when any subject proposed to be taught requires for its proper understanding to be illustrated by special appliances, *e.g.*, the subject of Geography by maps and models, and the science subjects by a collection of objects or collections in the form of a museum, such provision has been made.

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(*j*) That the school authorities have made provision to ensure discipline and good conduct among the pupils both within and without the school premises, and that there are suitable arrangements for their recreation.

(*k*) That when pupils are not resident with either parents or guardians, the school authorities will insist on such students living either in a hostel or a mess which is duly inspected and placed under the control of some person responsible to the Head Master of the school for the discipline and well-being of such pupils.

(*l*) That no teacher is allowed to teach—

(*i*) in the Entrance Class or Second Class or any section thereof, more than 50 pupils at the same time;

(*ii*) in any of the classes from the Third to the Sixth, or any section thereof, more than 40 pupils at the same time;

(*iii*) in either the Seventh or the Eighth Class, or any section thereof, more than 30 pupils at the same time.

3. The Syndicate shall also require full information as to the financial position of the school and must be satisfied that its financial stability is assured. Information obtained on this head shall not be published.

4. The Syndicate shall also require full information as to the reasons for the establishment of the school, and as to the number of schools of the same standard which exist in the neighbourhood of the proposed school, and it must be shown that the establishment and recognition of the school will not be injurious to the interests of education and discipline.

5. The Syndicate shall also require full information as to the fees, if any, which it is proposed to levy in the school.

6. The Syndicate shall require a school, as a condition of its recognition, to send in to the University once in each year, at such time as the Syndicate may prescribe, a short general report of the working of the school, together with a list of the staff of the school, and of any changes which may have taken place in the staff in the course of the preceding year.

The Syndicate shall also require that at the same time an abstract of the actual annual income and expenditure of the school shall be submitted, and shall insist that the remuneration of the teachers shall be on a reasonable scale and that the other expenditure shall be sufficient to maintain the school in efficiency.

The Syndicate shall also obtain an assurance that any transference of management and all changes in the teaching staff will be forthwith reported to the Syndicate.

7. On receipt of the letter of application for recognition, and

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of all such information as the Syndicate may consider to be necessary to establish a presumptive claim for the recognition of the school, the Syndicate shall call for a report on the points dealt with in Regulations 2—5 inclusive from a competent Inspector, and for this purpose the personal report of the Government Inspector of Schools of the Division in which the school is situated shall usually be considered to be sufficient.

This shall not, however, prevent the Syndicate from calling for special reports by any properly qualified person or persons on any or all of the foregoing points.

Should the person deputed be an Inspector of Schools, his report shall ordinarily be submitted through the Director of Public Instruction of the Province in which the school is situated with such remarks as the Director thinks it necessary to make.

8. On receipt of all the required information, the Syndicate shall decide whether the school shall be recognised or not, and, if recognised, the exact courses in which such school may submit candidates for the Matriculation Examination shall be stated in the letter of recognition. If a recognized school desires to add to the courses of instruction in respect of which it is recognized, the procedure described in Regulations 2—7 shall, so far as may be necessary, be followed.

9. One of the conditions of recognition, or of the continuance of recognition of a school already recognised, shall be that it shall submit to periodic inspection by a person or persons deputed by the Syndicate from time to time. It is desirable that such inspection take place at least once in each school year, and that copies of the inspection reports should be duly communicated to the University by the person or persons so deputed after each such inspection.

10. It shall be competent to the Syndicate at any time to withdraw the privilege of recognition granted under these Regulations or granted under any rules previously in existence, for any one of the following reasons :—

(*a*) If a school on average of three years fails to pass 33 per cent. of the candidates sent up for the Matriculation Examination.

(*b*) If the reports of inspections received show that the school is no longer worthy of recognition.

(*c*) If it is found that the conditions which were considered essential to the recognition of the school in the first instance and which obtained when the school was placed on the University list are no longer fulfilled.

(*d*) For any other reason considered to be sufficient by the Syndicate, the reason to be specified and recorded.

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No action shall be taken on (*b*), (*c*) or (*d*), of Regulation 10, without giving the School Committee an opportunity of stating its own case.

In reference to (*a*) the following procedure shall be adopted :—

(i) In each year, immediately after the results of the Matriculation Examination have been published, the Registrar shall prepare a list of the schools which on the average of the three preceding examinations (including that just ended) have failed to pass 33 per cent. of the candidates sent up for examination.

(ii) Such schools shall be warned before the end of July, that if they continue in future years to show unsatisfactory results, their names will be struck off the list of Recognised Schools.

(iii) In the year following such warning, if it is found, after the results of the Matriculation Examination have been declared, that any of the warned schools has again passed less than 33 per cent. of the candidates sent up, the privilege of sending up candidates to the Matriculation Examination shall be liable to be withdrawn from it. In this case notice of withdrawal of the privilege shall be issued by the Registrar not later than the 15th of July of each year, and shall take effect after the Matriculation Examination next following.

(iv) If, on the results of the fourth year so considered, the percentage of passes in any such warned school amounts to 33 per cent., no action shall be taken.

CHAPTER XXII.

CONDITIONS TO BE FULFILLED BY SCHOOLS NOW RECOGNISED.

1. Every school recognized by the University, at the time when these Regulations come into force, shall be entitled to exercise the rights conferred by recognition, till the privileges of recognition are withdrawn in the manner provided in Regulation 10 of Chapter XXI.

For this purpose, every school recognized as qualified to present candidates for the Entrance Examination shall be deemed qualified to present candidates for the Matriculation Examination in all subjects other than Geography and Elementary Mechanics, but no such school shall, without the special

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permission of the Syndicate, send up candidates for examination in either of these subjects.

If an application for special permission to take up either of these subjects is made, the Syndicate, before granting it, shall satisfy themselves that the school is provided with the necessary appliances and can make proper arrangements for teaching that subject.

2. As soon as practicable after the date on which these Regulations come into force, the Syndicate shall withdraw the privileges of recognition from all recognized schools situated beyond the territorial limits of the University as defined by the Governor-General in Council under section 27 of the Indian Universities Act. Such withdrawal shall take effect from a specified date not later than the 30th of April 1907.

3. As soon as practicable after the date on which these Regulations come into force, the Registrar shall forward a copy thereof to the authorities of each recognized school situated within the territorial limits of the University as defined by the Governor-General in Council under Section 27 of the Indian Universities Act, and invite them to furnish within three months (or such further time as may be prescribed in any case by the Syndicate), information upon the following points :—

(*a*) Whether the school is under the management of a regularly-constituted committee, on which the teaching staff is represented ; whether proper provision is made for the continuance of the existence of such committee, and whether the rules are such that the committee can exercise a necessary amount of control over the working of the school.

(*b*) Whether the qualifications, character and experience of the Head Master and the rest of the teaching staff are satisfactory, whether due provision is made in respect of the number of teachers and otherwise, for carrying on all the courses of instruction in which the school is recognized, and whether the conditions governing the appointment and tenure of office of the Head Master and the rest of the staff are such as to render proper continuity of work possible.

(*c*) Whether the buildings in which the school is situated and in which the instruction is carried on are adapted for the purposes of a school, and are in proper sanitary condition ; whether the surroundings are suitable and the arrangements made in the buildings and in the furnishing of them are likely to injure in any way the eyesight and general health of the pupils.

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(*d*) Whether the accommodation is sufficient for the classes under instruction in the school.

(*e*) Whether the sanitary conveniences attached to the school are adequate and kept in good order.

(*f*) Whether arrangements are made for the supply of good drinking water to the pupils, and facilities are provided to allow them to partake of refreshments.

(*g*) Whether provision is made for the maintenance of a library and for lending out appropriate books (not school text-books) for the use of students.

(*h*) Whether the school intends to undertake instruction in Geography or Elementary Mechanics; if so, whether the appliances and facilities provided are adequate.

(*i*) Whether provision is made to ensure discipline and good conduct among the pupils, both within and without the school premises, and whether arrangements are made for their recreation.

(*j*) Whether in the case of pupils who do not reside with parents or guardians, provision is made for their residence in lodgings inspected by and under the control of some person responsible to the Head Master for the discipline and well-being of such pupils.

(*k*) Whether the remuneration of the teachers is on a reasonable scale.

(*l*) The financial resources of the school, and actual annual income and expenditure for the last three years.

(*m*) The fees, if any, levied in the different classes of the school.

(*n*) The courses of study, the subjects taught, the routine of work, and the arrangements for exercises and for tutorial assistance.

4. If it appears in the case of any school that it has no regularly-constituted committee, or that it has a committee upon which the teaching staff is not represented, the Syndicate shall call upon the chief controlling authority to place the school forthwith under the management of a regularly-constituted committee on which the teaching staff is represented.

5. The Syndicate shall obtain from each school an assurance—

(*a*) that any transference of management and all changes in the teaching staff will be forthwith reported to the Syndicate,

(*b*) that after the expiry of twelve months from the date on which a copy of these Regulations is forwarded to the chief controlling authority of the school, no teacher will be allowed to teach,

(*i*) in the Entrance Class or Second Class or any sec-

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tion thereof, more than 50 pupils at the same time;

(*ii*) in any of the classes from the Third to the Sixth, or any section thereof, more than 40 pupils at the same time;

(*iii*) in either the Seventh or the Eighth Class, or any section thereof, more than 30 pupils at the same time;

(*c*) that as a condition of the continuance of recognition, the school will submit to regular and periodic inspection by a person or persons deputed by the Syndicate from time to time, and

(*d*) that a short general report of the working of the school together with an abstract of its actual annual income and expenditure will be submitted once a year at such time as the Syndicate may prescribe.

6. The Syndicate shall call upon each school referred to in Regulation 3 to take within a specified period (which may be extended from time to time at the discretion of the Syndicate) such action in respect of any of the matters mentioned in Regulations 3, 4 and 5, as may appear to them to be essential for its efficiency. Upon failure of the school to take the necessary action, after it has been given reasonable opportunity to do so, it shall be liable to have the privileges of recognition restricted or withdrawn, as the circumstances of the case may require. No order, however, shall be made by the Syndicate in this behalf, except upon a personal report on the condition of the school at the time, by a competent person deputed for the purpose, and after giving the School Committee an opportunity of stating its own case.

7. The preceding Regulations shall apply to the School Departments of Affiliated Colleges.

CHAPTER XXIII.

ADMISSION, TRANSFER AND WITHDRAWAL OF STUDENTS.

1. These Regulations shall apply only to Colleges affiliated in Arts, Science and Law.

2. At their Annual Meeting the Senate shall appoint a Committee of five Fellows, to be called the Transfer Committee, who shall deal with all questions referred to them in accordance with the following Regulations.

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Two members of the Committee and two only shall be persons not connected with any affiliated College.

The proceedings of the Committee shall be submitted every month to the Syndicate for confirmation, and the Syndicate may approve, revise or modify the decision of the Committee on any matter, or direct the Committee to review it. Three Members shall form the quorum. In the event of a vacancy occurring between two Annual Meetings of the Senate it shall be at once filled up by the Syndicate.

Admissions.

3. Admission of students to Affiliated Colleges shall ordinarily be allowed only at the commencement of an academical year. If a student applies to a College for admission more than three weeks after the opening of that College in any academical year, his case, unless he brings a Transfer Certificate, shall be referred to the Transfer Committee for decision as to whether he may be permitted to join such College.

4. If a student who has passed the Matriculation, or the Intermediate in Arts or Science, or the B.A. or B.Sc. Examination, applies for admission to a College, without having previously joined any other College, he may be admitted upon production of his University certificate. A student whose name appears in the gazetted list of candidates who have passed one of the aforesaid University Examinations may be provisionally admitted without a certificate, on condition of his producing the certificate within a reasonable time.

5. If a student has been sent up to a University examination, and has either not appeared, or has failed at such examination, he may, on production of the Registrar's receipt, be admitted to any College. The fact of his admission, with the date, shall be written across the face of the receipt.

6. If a student has failed, he shall produce a certificate showing the subject or subjects in which he has failed, which certificate the Registrar shall be bound to furnish within two days after payment of a fee of four annas.

7. A student will be recognised as admitted to a College as soon as he has been accepted by the Principal, and has, where fees are required by the College, paid his admission and first month's fee.

8. When a student has been admitted to an affiliated College, he shall be considered to belong to that College until—

(*a*) the end of the academical year in which he has been sent up to a University Examination, or

(*b*) the date borne on his Transfer or Withdrawal Certificate, or

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(*c*) he has given notice of withdrawal, or
(*d*) his name has been struck off the College books for absence without notice or for non-payment of College fees, or
(*e*) he has been expelled.

Transfers.

9. If a student has once been admitted to an Affiliated College under Regulation 4 or Regulation 5, he shall not, except as otherwise provided, be subsequently admitted to any other Affiliated College, without the production of a Transfer Certificate from the Principal of the College in which he has last been reading.

10. When a student has been admitted into a College, he shall not ordinarily be allowed to take a transfer to any other College except at the end of an academical year.

11. Application for a Transfer Certificate must be made by letter to the Principal of the College. It must be signed by the applicant and countersigned by the applicant's parent or guardian.

12. If application is made at the close of an academical year, the only ground on which it can be refused is, the failure to pay the sums due to the College, including tuition fees, and fines and transfer fee, if any. If it is so refused the ground of refusal shall be notified in writing to the applicant, who shall have the right of appeal to the Transfer Committee.

13. If a student applies for transfer, against whose name "gross misconduct" has been entered in the University Register of students, this fact shall be noted in his Transfer Certificate.

14. If a student applies for transfer at any time other than at the end of an academical year on the ground of (1) transfer of his parent or guardian from the station at which the first College is situated, or (2) desirability of a change of climate and station on the ground of health, duly certified by proper medical evidence, or (3) any other good and sufficient reason, the Principal may grant him a transfer. If the Principal is of opinion that the application for transfer ought not to be granted, he shall, if the student so desires, at once refer the case to the Transfer Committee, stating his grounds of objection.

15. Transfer Certificates under the previous Regulation shall only be issued once a month, except in cases of urgency. The ordinary date of issue shall be the last day of the month, or if this day falls within a vacation or on a holiday, the next preceding working day.

16. A student desiring a Transfer Certificate under Regulation 14 shall submit his application not less than ten days before

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the authorised date of issue. Not less than three days before the latter date he shall be informed whether his application has been granted, and in that case he shall be furnished with a statement of all the sums due by him to the College. If these dues are paid by him on or before the authorised date of issue, he shall receive his Transfer Certificate on that date.

17. If owing to the intervention of holidays or some unforeseen contingency, it is found impossible, in accordance with the conditions laid down, to issue the certificate on the last day of the month or the next preceding working day, the certificate shall be issued as soon after as possible, the same notice as specified above being given to the applicant with regard to the sums due by him. The date borne on the Transfer Certificate shall be that of the last day of the month for which the transfer is desired, except in cases of urgency, where the date of the certificate shall be the date of issue.

18. If the student does not pay the sums due by him within the time specified above, he shall not be entitled to his Transfer Certificate until the last day of the month in which he pays his dues, or the corresponding day preceding a vacation or holiday.

19. If application is made for a Transfer Certificate after the commencement of a vacation exceeding fifteen days and extending beyond the last day of the month in which it commences, the certificate, if granted, shall bear the date of the last day of such vacation if this coincides with the last day of a month; otherwise, it shall bear the date of the last day of the preceding month. The student applying for transfer shall submit his application at least six days before and shall receive his certificate, if granted, not later than five days after the end of the vacation. He shall before the issue of the certificate receive at least three days' intimation of the sums due by him to the College from which he desires transfer, and if these dues are not paid within this time the issue of the certificate shall be deferred in accordance with Regulation 18.

20. All fees for the month corresponding to the date borne on the Transfer Certificate shall be paid to the College from which the transfer is taken, and fees shall likewise be paid to the same College for an additional month if the application for transfer is made before a vacation which commences not more than one month after, and which extends more than one month beyond the date on the certificate. The fact of the payment of such additional fees shall be duly entered on the certificate, and unless a student takes admission to another College within a month of the date of his Transfer Certificate he shall not be liable to pay these fees at the second College.

21. In all cases, a student shall remain on the books of the

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College from which he seeks a transfer until the date borne on the Transfer Certificate, and his attendance at lectures shall be reckoned up to and including that date.

22. The Transfer Certificate shall be in such form as the Syndicate may from time to time prescribe.

23. A student shall be liable to pay a transfer fee before obtaining his certificate. The transfer fee shall not (except under special orders of the Transfer Committee in the case of Colleges in which no fees are charged) exceed the ordinary monthly fee of the class.

24. If a student applies for transfer who has failed to submit the exercises required of him, or to give satisfaction at the periodical examinations, the fact shall be noted on the Transfer Certificate.

25. If a student applies for transfer who has been refused permission to appear at a University Examination, the fact of such refusal, with the reasons, shall be noted on the Transfer Certificate.

26. If a student applies for transfer who has not been permitted to continue his studies in the College owing to his non-appearance or failure at the College examinations, or who has not been allowed promotion, the fact shall be noted on the Transfer Certificate, and he shall not be admitted into a higher class in another College within twelve months.

Leaving Certificates.

27. A student temporarily or permanently ceasing his studies may claim a Leaving Certificate, which shall be in the same form as a Transfer Certificate, and for which the same fee, if any, shall be paid.

28. The Principal of a College may accept a Leaving Certificate in lieu of a Transfer Certificate in a session subsequent to that in which it was issued, but not in the same session. Such Certificate shall be presented at the beginning of the session, and the student shall ordinarily read from the beginning for the full academical year. But by special leave of the Syndicate the lectures in the College then entered may be reckoned from the day and month corresponding to the date on which the student's connection with his former College ceased.

29. The only grounds on which a Leaving Certificate can be refused are (1) gross misconduct, (2) failure to pay the sums due to the College.

30. If a student gives notice of withdrawal from a College without applying for a Leaving Certificate, he shall only be charged fees up to the end of the month in which he gives such notice.

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Absence without Notice.

31. If a student is absent without notice for more than one month, his name may be struck off the books, in which case he shall be liable to pay fees for one month subsequent to that in which he last attended the lectures.

32. If a student who has been absent without notice for more than one month applies for a Leaving Certificate, the Principal may, at his discretion, grant such certificate, and may date the student's withdrawal from the day on which he last attended the lectures.

Expulsion and Rustication.

33. A Principal may for breach of College discipline—

(1) suspend a student for one month or less;
(2) rusticate a student for any period exceeding one month and not exceeding the remainder of the academical year; or
(3) expel a student.

In the second and third cases the matter shall be reported by the Principal to the Syndicate, in the form of a brief statement, including the date of rustication or expulsion.

34. If a student who has been so rusticated or expelled desires to continue his studies in some other College, he may apply to the Syndicate, who shall, after consideration of the circumstances, issue such orders as they may think proper: Provided that no order shall issue permitting such student to continue his studies in another College without a reference to the Principal of the College from which the student has been rusticated or expelled.

Miscellaneous.

35. A student before being sent up to a University examination shall be required to pay all sums due to the College in which he has been reading, including fees up to the end of the academical year.

36. Any instance of alleged "gross misconduct" on the part of a student, when not followed by expulsion or rustication, must be at once notified by the Principal of the College to the Transfer Committee, together with a statement by the student. The Transfer Committee shall determine whether the case shall be recorded in the University Register of Students as one of "gross misconduct." Unless it is so recorded no future action taken on it by the Principal shall be recognised by the University.

37. Wilful transgression or colourable evasion of any of the foregoing rules shall be reported to the Syndicate.

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38. All questions arising between one Principal and another respecting the interpretation of these rules shall be referred as soon as possible to the Transfer Committee.

39. The academical year for the purpose of these Regulations shall be taken to commence on the 1st of June in one year and to end on the 31st of May in the next.

The Syndicate may alter these limits if necessary.

CHAPTER XXIV.

RESIDENCE OF STUDENTS.

1. Every student reading in an Affiliated College with the object of appearing at a University examination, who does not reside with his parents or other legal guardian, or guardian approved by the Principal of his College, shall reside either in his College or in lodgings approved by his College.

Any student making a false declaration in respect of the guardianship under which he is living shall be punished by the Principal of his College, who will deal with the offence as occasion requires.

Act VIII of 1904, sec. 21 (c).

2. A student shall be held to be residing in a College, if he resides in a Collegiate Hostel as defined under Regulation 7.

3. The following classes of lodgings may be approved by a College :—

(*a*) Non-Collegiate Hostels, that is, hostels under external management.

(*b*) Messes attached or unattached.

(*c*) Private lodgings.

4. At the Annual Meeting of the Senate a Committee of six Fellows, not less than three of whom must be Indians, shall be appointed to deal in accordance with these Regulations with questions relating to the residence of students in non-collegiate hostels, messes, and private lodgings.

5. This Committee shall be called the Students' Residence Committee. The proceedings of the Committee shall be submitted every month to the Syndicate for confirmation, and the Syndicate may approve, revise or modify the decision of the Committee on any matter, or direct the Committee to review it.

Four members shall form a quorum.

In the event of a vacancy occurring in the course of the year it shall be at once filled up by the Syndicate.

6. Nothing in these Regulations shall be taken to authorise

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the Students' Residence Committee or any member thereof to interfere with the internal management of a hostel or mess, or with the control of a Principal over his students. But if the Committee is satisfied, upon the report of one or more of its members, or of an Inspector, that a hostel or mess is maintained or conducted in a manner contravening these Regulations, the Committee shall report the matter to the Syndicate.

Collegiate Hostels.

7. A Collegiate Hostel is a Boarding House for students which is under the direct and exclusive control of one College, which is regarded as an integral part of that College, and which admits only those students who are reading in that particular College.

8. The management of a Collegiate Hostel shall be entirely in the hands of the Governing Body of the College to which it belongs. There shall be in every such Hostel a Resident Superintendent, and, if necessary, one or more Assistant Superintendents.

9. The Principal of the College concerned shall frame rules for his Collegiate Hostel, but in the case of every such hostel the following practices shall be observed :—

(*a*) Only male servants shall be employed.
(*b*) A roll shall be called both morning and evening.
(*c*) Without the special permission of the Superintendent, no student shall absent himself from the Hostel between 9 P.M. and 6 A.M.
(*d*) The Superintendent shall keep a Gate Book in which he shall enter the name of any student who returns to the Hostel between the above hours ; he shall also enter his remarks against each case.

10. Every Collegiate Hostel shall be inspected once a year by the Inspector of Colleges.

11. Students shall have no right of appeal to the Syndicate against the orders of the Governing Body upon questions of internal discipline.

A student cannot be expelled from a Collegiate Hostel without being also expelled from the College to which it belongs, but he may be transferred to other lodgings under the control of the Principal.

Non-Collegiate Hostels.

12. A Non-Collegiate Hostel is a Boarding House for students, under external management. A Non-Collegiate Hostel shall not be recognised unless the individual or individuals responsible for the finances of such hostel can give reasonable guarantee for

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its continued maintenance. Such Hostels may admit only the following classes of Boarders :—

(1) Students of any Affiliated College.
(2) Tutors of such students ;
(3) School-boys reading in recognised schools who are nearly related to students residing in such hostels, and whose parents or guardians desire them to live with or under the direct supervision of such students.

Boarders belonging to classes (2) and (3) shall not be admitted without the sanction of the Students' Residence Committee.

13. Every Non-Collegiate Hostel shall be (*a*) under the supervision of a Manager, and (*b*) under the general control of a Visiting Committee, both approved by the Students' Residence Committee. The Visiting Committee shall be composed of three persons, of whom at least two shall be representatives of the College or Colleges concerned.

14. All Non-Collegiate Hostels shall be open to inspection by the Students' Residence Committee and by any duly appointed University Inspector. Every such hostel shall keep an Inspection Book in which the inspecting authorities may enter remarks.

15. There shall be in every such hostel a properly qualified Resident Superintendent, and, if necessary, one or more Assistant Superintendents.

16. The conditions laid down under Regulation 9, clauses (*a*), (*b*), (*c*) and (*d*) shall also be enforced as regards all Boarders in the case of Non-Collegiate Hostels : and in addition thereto the Superintendent shall keep a Register of the Boarders containing the names and home addresses of the Boarders and of their parents or other guardians. This Register shall contain a column for remarks.

17. Every Non-Collegiate Hostel shall have written or printed rules, and such rules shall not contravene any of the foregoing conditions.

Messes.

18. A mess is a temporary Boarding House formed by a combination of students who desire to share expenses.

A mess has not necessarily any fixity of location for a period longer than one academical year, nor does the responsibility for its finances rest with the College or Colleges to which its members belong. Students not otherwise provided for by these Regulations shall live in messes provided or approved by the College authorities.

19. In the case of messes for which the University, or any other public body provides the funds in part or in whole, each mess shall be attached to one College, and the students living

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in that mess shall be all students of one and the same College, and the Principal of that College shall have full control over that mess. Such messes shall be called attached messes.

The public body which provides the funds for an attached mess shall appoint a Visiting Committee consisting of three persons for that mess.

20. Regulations 14 to 17 shall apply equally to attached messes.

21. Messes which receive no subvention from public bodies shall be known as unattached messes, and to them shall apply Regulations 12, 14, 15, 16 and 17.

There shall also be a Visiting Committee for unattached messes, consisting of three persons approved by the Students' Residence Committee, two of whom at least shall be representatives of the College or Colleges concerned.

Recognition and License.

22. Every Collegiate Hostel must obtain a certificate of recognition from the University.

All other hostels and all messes must obtain annually, within such time as the Syndicate may determine, a License from the University.

All applications for recognition of Collegiate Hostels shall be submitted by the Governing Body of the College concerned, and shall be dealt with by the Syndicate. Applications for License shall be dealt with by the Students' Residence Committee, and submitted in the case of (*a*) Non-Collegiate Hostels, by the Proprietor, (*b*) Attached messes, by the Principal of the College concerned, and (*c*) Unattached messes, by the College or Colleges concerned.

23. In dealing with applications for Recognition or License, the Syndicate or the Students' Residence Committee, as the case may be, shall have regard to the following points :—

(*a*) Suitability of the buildings.
(*b*) Adequacy of the accommodation.
(*c*) Suitability of the neighbourhood.
(*d*) Sanitary conditions.

24. The Senate may from time to time make rules not inconsistent with these Regulations relating to messes and Non-Collegiate Hostels.

Private Lodgings.

25. Upon the recommendation of the Principal of his College, a student may be permitted to live in his own residence or hired lodgings, provided that (1) if he is under 18 years of age he shall

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be accompanied by a tutor approved by his parents or other guardian, and (2) in any case the Students' Residence Committee is satisfied that he can be permitted so to live without detriment to his health, studies or character.

CHAPTER XXV.

EXAMINATIONS.

Setting of Papers.

1. No question shall be asked at any University examination which would require an expression of religious belief on the part of the candidates; and any answer or translation given by any candidate shall not be objected to on the ground of its expressing peculiarities of religious belief.

2. Candidates shall give their answers in their own words as far as practicable in all subjects. This rule shall be inserted as a head note in every question paper.

3. Examiners setting papers shall be guided, as to the scope of the subject of examination, by the syllabus prescribed in the Regulations, and as to the standard and extent of knowledge required, by the books, if any, recommended from time to time for such purpose.

4. No copy of any examination paper is to be retained by the person setting it.

5. The papers set should be such as candidates can reasonably be expected to answer within the time allotted. The questions in each subject should be fairly distributed over the whole course in that subject, and should conform to the Regulations laid down for the particular examination; there should not be any marked change of standard from year to year, but it is not required that the same type of questions should be set every year. Examiners shall always allow some choice of questions.

6. Questions should be so framed as to encourage good methods of work and teaching, and to discourage unintelligent memorizing.

Awarding of marks.

7. In the case of examinations in all Faculties up to and including the examination for the Bachelor's Degree, the Registrar shall, as soon as the results have been tabulated, prepare a list of the candidates who have failed in one subject only; in order to guard against any possible inaccuracy, their papers in the subject in which they have failed shall be re-examined *on*

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the method of marking already adopted, and without any alteration of the standard.

8. Examiners, in giving marks, shall take the correctness of the language of the answer into account.

9. Examiners, in giving marks, shall consider whether the answers indicate an intelligent appreciation of the subject or are merely the result of unintelligent memory work.

Meetings of Examiners.

10. As soon as possible after an examination has been held, the persons who have set any question paper in the examination, and those who are to examine the answers to that paper or any portion of it, and the Head Examiner, if there is one, shall meet to determine the kind or standard of answers to be expected from candidates, and to decide upon a system of marking. Their conclusions shall be embodied in a memorandum to be jointly signed by them and forwarded to the Registrar. If, owing to unavoidable circumstances, any Examiner who has set a paper is unable to attend the meeting, the remaining Examiners contemplated by this Regulation shall meet and transact the aforesaid business.

11. In the case of any examination for the degree of Bachelor, Master, or Doctor in the Faculties of Arts and Science, and in the case of every examination in the other Faculties, the entire body of examiners for that examination shall meet, as soon as possible after the tabulation of the results, and draw up a report of the examination as a whole for the consideration of the Syndicate.

As soon as possible after the publication of the results of every examination in every Faculty referred to in the preceding paragraph, the persons who have examined the answer papers in each subject shall meet together and draw up a report upon the examination in that subject for the consideration of the Syndicate.

12. The reports submitted to the Syndicate shall ordinarily embody such remarks and recommendations suggested by the work done of the candidates which it is thought desirable in the interests of education to communicate to the Heads of Colleges and schools.

Miscellaneous.

13. English shall be the medium of examination in all subjects except where otherwise specifically indicated.

14. Members of the Syndicate or of the Boards of Studies shall not be debarred from acting as Examiners.

15. Canvassing for examinerships will not be countenanced

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by the University; and if it is proved to the satisfaction of the Syndicate that canvassing has been carried on by any person applying for an examinership, the candidate shall be disqualified.

16. Examiners are required to keep the results of the examinations and the marks assigned to candidates strictly secret.

17. If it is proved to the satisfaction of the Syndicate that the questions in any subject are not such as candidates could reasonably be expected to answer within the time allotted, or have not been fairly distributed over the whole course in that subject, or do not conform to the Regulations laid down for the examination in that subject, or show a marked change of standard, or that from any other cause injustice has been or is likely to be done, the Syndicate shall issue such directions as may be necessary to rectify matters.

18. No candidate shall ordinarily be declared to have passed or to have obtained Honours unless he has attained the standard laid down in the Regulations for a Pass or for Honours. If, however, the Syndicate are satisfied that consideration ought to be allowed, in the case of any candidate, by reason of his high marks in a particular subject or in the aggregate, the Syndicate may pass such candidate or award him Honours as the case may be:

Provided that no action shall be taken by the Syndicate in this behalf, except—

(*a*) upon the Report of the Moderators in the case of the Matriculation or the Intermediate Examination in Arts, or Science, or

(*b*) upon the Report of the Examiners in the case of any other Examination.

Arts and Science Examinations.

Appointment of Examiners.

1. The Registrar shall, at such times as the Syndicate may determine, send to all Fellows on the Faculties of Arts and Science and to all Heads of Colleges affiliated in Arts and Science who are not Fellows, a circular, requesting them to forward within one month the names of persons whom they consider suitable for appointment as Examiners for the University examinations specified by the Syndicate.

Every such recommendation shall be accompanied by a brief statement of the special qualifications of their nominees.

2. Such recommendations and any applications from candidates for examinerships received by the Registrar shall, in the first instance, be referred to the Boards of Studies concerned, who

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shall be asked to nominate for appointment as Examiners a number of persons not less than that required for each examination as indicated by the Syndicate, and not more than half in excess of that number. In appointing examiners the Syndicate shall consider the recommendations and applications, together with the reports of the Boards thereon, but its selection shall not be limited by them.

3. A Board of Examiners consisting of two or more persons shall be appointed by the Syndicate, whenever practicable, to set papers in each subject in each examination of the University. Each paper shall, whenever practicable, be set by two Members of the Board in consultation. In the case of a difference of opinion arising between two Examiners, the point shall be referred to the other Member or Members of the Board, if any, otherwise it shall be referred to the Syndicate.

4. One Member of the Board shall, unless the Syndicate consider it undesirable, be appointed Head Examiner in the case of examinations for which a Head Examiner is required. In other cases, as far as practicable, the Members of the Board who set the papers shall be among those who look over the answer-papers.

5. For the Matriculation, the Intermediate in Arts and Science, and the B.A. and B.Sc. examinations, no one shall be appointed Member of a Board of Examiners to set a paper in a subject of which he teaches the whole or a part for the corresponding examination.

6. The Board of Examiners in each subject for the degree of Master in the Faculties of Arts and Science shall be composed of—

(*a*) the University lecturers in that subject, and

(*b*) one or more other Examiners appointed by the Syndicate. Such Examiners shall not be persons lecturing to or preparing candidates for the examination in the subject for which the Board is constituted.

7. Each Board appointed under the preceding Regulation shall meet as soon as possible after appointment for the purpose of apportionment of the examination papers in the subject for which it has been constituted. The apportionment as far as the University Lecturers are concerned shall ordinarily be proportionate to the course covered by their respective lectures. The distribution of papers shall be kept strictly secret.

Moderators.

8. Before the commencement of the Matriculation Examination or the Intermediate Examinations in Arts and Science, the Syndicate shall appoint five Syndics as Moderators, of whom three shall be Members of the Faculty of Arts, and two Members of the Faculty of Science.

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The duties of the Moderators shall be—

(*a*) to receive from the Head Examiners or the Examiners, as the case may be, for the Matriculation Examination and the Intermediate Examinations in Arts and Science, a Report on the Examination in the subject with which they are concerned, to consider the Reports, and to submit a Report to the Syndicate embodying such points as ought, in their opinion, to be brought to its notice; and

(*b*) to report to the Syndicate the names of candidates, if any, who have not attained the standard laid down in the Regulations, but who, in the opinion of the Moderators, deserve consideration by reason of the high marks obtained by them in a particular subject or in the aggregate.

Law Examinations.

Appointment of Examiners.

1. The Registrar shall, at such times as the Syndicate may determine, send to all Fellows on the Faculty of Law and to all Heads of Colleges affiliated in Law who are not Fellows, a circular, requesting them to forward within one month the names of persons whom they consider suitable for appointment as Examiners for the Preliminary and Final B.L. Examinations.

Every such recommendation shall be accompanied by a brief statement of the special qualifications of their nominees.

2. Such recommendations and any applications from candidates for examinerships received by the Registrar shall, in the first instance, be referred to the Board of Studies in Law, who shall be asked to nominate for appointment as Examiners a number of persons not less than that required for each examination as indicated by the Syndicate, and not more than half in excess of that number. In appointing Examiners the Syndicate shall consider the recommendations and applications, together with the reports of the Board of Studies thereon, but its selection shall not be limited by them. The Dean of the Faculty of Law for the time being shall be *ex-officio* President of the Examiners thus appointed.

3. A Board of Examiners consisting of three or more persons shall be appointed by the Syndicate, whenever practicable, to set papers in each examination. The Dean of the Faculty of Law for the time being shall be *ex-officio* President of each Board. Each paper shall, whenever practicable, be set by two Members of the Board in consultation. In the case of a difference of opinion arising between two Examiners, the point shall be referred to

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the President. The papers set shall be moderated by him in consultation with the other Members of the Board.

4. As far as practicable, the Members of the Board who set the papers shall be among those who look over the answer-papers.

5. For the Preliminary and Final B.L. Examinations, no one shall be appointed Member of a Board of Examiners to set a paper in a subject of which he teaches the whole or a part for the corresponding examination.

Medical Examinations.

Appointment of Examiners.

1. The Registrar shall, at such time as the Syndicate may determine, send to all Fellows on the Faculty of Medicine and to all Heads of Colleges affiliated in Medicine who are not Fellows, a circular, requesting them to forward within one month the names of persons whom they consider suitable for appointment as Examiners for the University Examinations specified by the Syndicate.

Every such recommendation shall be accompanied by a brief statement of the special qualifications of their nominees.

2. Such recommendations and any applications from candidates for Examinerships received by the Registrar shall, in the first instance, be referred to the Board of Studies in Medicine, who shall be asked to nominate a number of persons not less than that required for each examination as indicated by the Syndicate, and not more than half in excess of that number. In appointing Examiners the Syndicate shall consider the recommendations and applications, together with the reports of the Board of Studies thereon, but its selection shall not be limited by them. The Dean of the Faculty of Medicine for the time being shall be *ex-officio* President of the Examiners thus appointed.

3. A Board of Examiners consisting of two or more persons shall be appointed by the Syndicate, whenever practicable, to set papers in each subject in each examination. The Dean of the Faculty of Medicine for the time being shall be *ex-officio* President of each Board. Each paper shall, whenever practicable, be set by two Members of the Board in consultation. In the case of a difference of opinion arising between two Examiners, the point shall be referred to the President. The papers set shall be moderated by him in consultation with the other Members of the Board.

4. As far as practicable, the Members of the Board who set the papers shall be among those who look over the answer-papers.

5. Of the persons appointed to set papers in any subject for

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any examination, one at least must be a Teacher or Professor in that subject, and one at least, whenever available, shall be a person not teaching that subject for that examination.

6. Every oral, practical and clinical examination shall be conducted by two Examiners jointly.

Engineering Examinations.

Appointment of Examiners.

1. The Registrar shall, at such times as the Syndicate may determine, send to all Fellows on the Faculty of Engineering, and to all Heads of Colleges affiliated in Engineering who are not Fellows, a circular, requesting them to forward within one month the names of persons whom they consider suitable for appointment as Examiners for the University Examinations specified by the Syndicate.

Every such recommendation shall be accompanied by a brief statement of the special qualifications of their nominees.

2. Such recommendations, and any applications received by the Registrar shall, in the first instance, be referred to the Board of Studies in Engineering, who shall be asked to nominate a number of persons not less than that required for each examination as indicated by the Syndicate, and not more than half in excess of that number. In appointing Examiners, the Syndicate shall consider the recommendations and applications, together with the reports of the Board thereon, but their selection shall not be limited by them. The Dean of the Faculty of Engineering for the time being shall be *ex-officio* President of the Examiners so appointed.

3. A Board of Examiners consisting of two or more persons shall be appointed by the Syndicate, whenever practicable, to set papers in each subject in each examination. The Dean of the Faculty of Engineering for the time being shall be *ex-officio* President of each Board. Each paper shall, whenever practicable, be set by two Members of the Board in consultation. In the case of a difference of opinion arising between two Examiners, the point shall be referred to the President. The papers set shall be moderated by him in consultation with the other Members of the Board.

4. As far as practicable, the Members of the Board who set the papers shall be among those who look over the answer-papers.

5. Of the persons appointed to set papers in any subject for any examination, one at least must be a Lecturer on that subject, and one at least shall be a person not teaching that subject for that examination.

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CHAPTER XXVI.

CONDITIONS OF STUDY IN AFFILIATED COLLEGES.

1. A College affiliated in any subject for any of the examinations mentioned in this section shall provide for the delivery of the minimum number of lectures specified hereinafter to students who take up that subject.

(*i*) Intermediate Examination in Arts or Science—

(*a*) 140 lectures in each subject, of which not less than 60 shall be delivered in the second year.

(*b*) No lectures need be delivered in Vernacular Composition.

(*ii*) B.A. or B.Sc. Examination—

(*a*) In the Pass Course in each subject—160 lectures, of which not less than 60 shall be delivered in the second year.

(*b*) In the Honours Course in each subject—80 lectures in addition to the lectures in the corresponding Pass Course, of which not less than 30 shall be delivered in the second year.

(*c*) No lectures need be delivered in Vernacular Composition.

(*iii*) M.A. or M.Sc. Examination—180 lectures in each subject.

(*iv*) Licentiate in Teaching—

Theory and Practice of Teaching	80 lectures.
Methods of Teaching	80 lectures.
Selected Educational Classics	20 lectures.
Course in English	60 lectures.

(*v*) Bachelor of Teaching—

Theory and Practice of Teaching	60 lectures.
Methods of Teaching	60 lectures.
History of Educational Ideas	40 lectures.
Educational Classics	20 lectures.

(*vi*) Preliminary or Final Examination in Law—in each subject or group of subjects 32 lectures and 12 sittings of a Moot-Court.

(*vii*) Preliminary Scientific M.B. Examination—

Inorganic Chemistry	40 lectures.
Physics	20 lectures.
Zoology	20 lectures.
Botany	20 lectures.

(*viii*) First M.B. Examination—

Anatomy	100 lectures.
Physiology	80 lectures.
Pharmacology	80 lectures.
Organic Chemistry	15 lectures.

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(*ix*) Final M.B. Examination—

Medicine	.. 100 lectures.
Mental Diseases	.. 8 lectures.
Surgery	.. 100 lectures.
Ophthalmology	.. 15 lectures.
Midwifery	.. 80 lectures.
Medical Jurisprudence ..	.. 40 lectures.
Hygiene	.. 20 lectures.

In the Medical Course there shall be in addition to the lectures specified above practical courses as prescribed by the Syllabus.

2. If a College fails for three consecutive years to deliver the minimum number of lectures prescribed above in any subject, proceedings shall be taken under section 24 of the Indian Universities Act to withdraw from it the privileges of affiliation in that subject.

3. Every lecture shall cover a period of not less than 45 minutes inclusive of the time allowed by the College Rules for the assembling of the students.

4. For the purpose of these regulations a period of practical work or class exercises or class examinations of not less than 45 minutes shall be considered to be equivalent to a lecture.

5. Every candidate who desires to appear as a collegiate student at any one of the examinations mentioned in section 1 shall be required to prosecute a regular course of study for the time specified in the Regulations in the subjects which he takes up for the examination in question.

6. No student shall be considered to have prosecuted a regular course of study in any subject for any examination unless he has attended at least 75 per cent. of the lectures delivered in that subject in one or more affiliated Colleges.

7. No lecture shall be deemed to be a lecture within the meaning of these Regulations, unless it is delivered to a whole class or permanent section of a class, and unless it is reckoned in calculating the percentage of attendance of all students of the class or section who have taken up the subject in which the lecture is delivered.

8. If the College, to which the student belongs, is not affiliated in a particular subject which he desires to take up for examination, he may be permitted, by mutual arrangement between the Principals of the Colleges concerned, to attend lectures on that subject in another duly affiliated College.

9. The percentage of attendance of every student under section 5 shall be calculated on the total number of lectures delivered in each subject from the commencement of the academical year. If a student is transferred from one College to another, the percentage of attendance in the first College shall be calculated on the total number of lectures delivered in each

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subject up to the date borne on the transfer certificate, and in the second College, on the lectures delivered after that date.

10. In cases where a student, after study for the period prescribed by the Regulations, shall have failed to attend 75 per cent. of the lectures in any subject or subjects during this course, he shall not be admitted to the examination as a collegiate student, unless (*a*) he attends lectures in such subject or subjects for another academical year, and (*b*) his attendance in the subject or subjects in question for the period prescribed by the Regulations amounts to at least 75 per cent. of the lectures delivered in the College or Colleges in which he studied for the prescribed period.

11. If a candidate for any of the examinations mentioned in Regulation 1 does not present himself at the examination immediately succeeding the completion of his regular course of study, he may appear at any of the two following examinations of the same standard, provided that he produces, in addition to the ordinary certificate or certificates as required by the Regulations, a certificate from the Principal of the College at which he last studied or from a member of the Senate, testifying to his good character during the intervening period.

If such candidate desires to present himself at any subsequent examination he shall be required to prosecute a fresh course of study for the full period in accordance with the Regulations.

12. No student shall be considered to have prosecuted a regular course of study in any subject for the M.A. or M.Sc. Examination under University Professors or Lecturers unless the total number of lectures delivered by such Professors or Lecturers is at least 180, and unless he has attended at least 75 per cent. of the lectures in each course.

If, however, the total number of University lectures delivered in any subject does not amount to 180, attendance on 75 per cent. of the lectures in each available course will suffice.

CHAPTER XXVII.

CONDITIONS TO BE FULFILLED BY COLLEGES AFFILIATED IN SCIENCE.

General.

Colleges affiliated in any Science subject except Geography and Experimental Psychology must be provided with gas and a plentiful supply of water, and there must be adequate connexions for these with the portion of the building allotted to science teaching. There must be a suitably fitted lecture-

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theatre of the ordinary type, and the lecture table, which should not be less than 12 feet long, must be provided with gas and water fittings, and must also be adapted in other respects for lecture demonstrations in the various sciences for which it is intended to use the theatre. There should be an aperture in one of the walls by which a beam of solar light can be admitted for optical and projection work. One lecture-theatre will ordinarily suffice, but if the number of subjects in which the College is affiliated is considerable, additional accommodation in this respect will be necessary. There shall be separate rooms for practical work in each of the subjects for which the College is affiliated, and in each such room there shall be a good black-board and a small demonstration table. A sufficient quantity of apparatus, etc., must be provided both for practical and lecture work, and there must be ample cupboard room for the apparatus when not in use. Lists are given in Appendix B shewing what may be considered the minimum requirements in each case. For all Colleges affiliated up to the M.A. or M.Sc. standard in Physics or Chemistry an electric installation is desirable and should certainly be provided wherever there is a town supply of electricity.

SPECIAL.

I.—Physics.

(*a*) *Intermediate Standard.*—Not more than 20 students shall be placed under one teacher in the practical class at one time. If the number exceeds 20, an additional teacher or demonstrator will be required. The size of a room which it is intended shall accommodate the above number of students, shall not be less than 20 feet by 25 feet. If the number of students exceeds 20, the size of the room must be proportionately increased. The working tables should be small, about 6 feet by 3 feet, and should be very strongly made of teakwood. One or two large sinks with water taps must be provided.

(*b*) *B.A. or B.Sc. Standard.*—There shall be one teacher to every 15 students in the practical class. The room used for the Intermediate course, having the dimensions given above, will suffice for the B.A. or B.Sc. students and for a class of fifteen, but it is necessary for the work in the present course that each working place on the tables should be supplied with gas. A small room for optical work is desirable, but if it is not possible to provide this a portion of the laboratory, which in this case should be larger, may be screened off for the purpose. A small workshop should be attached to the laboratory.

(*c*) *M.A. or M.Sc. Standard.*—There shall be one teacher to every 10 students in the practical class. In addition to the

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general laboratory two other rooms will be necessary, one for optical and the other for electrical work. A larger workshop will be necessary than in the previous case, and it should be furnished with a good lathe. A permanent *mistri* should be employed.

II.—Chemistry.

(*a*) *Intermediate Standard.*—Not more than 20 students shall be placed under one teacher in the practical class at one time. If the number exceeds 20, an additional teacher or demonstrator will be required. The size of a room which it is intended shall accommodate the above number of students, shall not be less than 20 feet by 30 feet, and if the number of students exceeds 20, it must be proportionately increased. The working benches must be provided with gas, one jet for each student. Those benches which occupy the centre of the room should, for the sake of economy of space, be of double width, so as to admit of students working on both sides, and the shelf for reagents may, in this case, run along the centre of the table. Water taps with the corresponding sinks, should be provided in the ratio of about one to four students, but the sinks in the case of the tables of double width, may be replaced by a properly treated wooden trough running along the centre. Two or three fume closets are necessary; one will suffice, if the working tables are supplied with small draught hoods.

(*b*) *B.A. or B.Sc. Standard.*—There shall be one teacher to every 15 students in the practical class. The laboratory for the Intermediate course can be adapted for the use of the B.A. and B.Sc. students as well. A small and well-lighted balance room and a combustion room must be provided in addition.

(*c*) *M.A. or M.Sc. Standard.*—An additional laboratory with rooms for special work shall be provided for the use of M.A. and M.Sc. students, not more than ten of whom shall be under the supervision of one teacher.

III.—Physiology.

(*a*) *Intermediate Standard*—Not more than 24 students shall be placed under one teacher. The working benches shall be furnished with racks for chemical and microscopical reagents, and gas, water and sinks shall be supplied in the same way as in the chemical laboratory. The size of a room for 24 students shall be not less than 20 feet by 30 feet.

(*b*) *B.A. or B.Sc. Standard.*—Not more than 12 students shall be placed under one teacher. The room for the practical work of the Intermediate standard can with some slight adaptation be also used for the present standard.

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(c) *M.A. or M.Sc. Standard.*—For M.A. or M.Sc. Classes at least two additional laboratories are necessary for special work.

IV.—Botany.

The number of students that may be placed under one teacher in the practical classes is the same as for Physiology, and the conditions to be fulfilled with regard to the laboratories are substantially the same as in that subject.

V.—Zoology.

Not more than 20 students shall be placed under one teacher in the practical classes. Otherwise the requirements are the same as in the case of Physiology and Botany except that the accommodation required for M.A. and M.Sc. students will not be so great as in those subjects.

VI.—Geology.

The chief requirements in this subject are a small geological museum, and a laboratory suitable for optical as well as for a certain amount of chemical work.

VII.—Geography.

There must be a small museum for practical teaching and demonstration, and a well-lighted room suitable for drawing and modelling, and fully furnished with the appliances necessary for the course of practical work prescribed by the Regulations.

VIII.—Experimental Psychology.

The laboratory must be furnished with plastic and other models and charts for anatomical and physiological demonstrations, in addition to the appliances necessary for psycho-physical work, and must also be suitable for optical and electrical work.

CHAPTER XXVIII.

UNIVERSITY LIBRARY.

1. At the Annual Meeting, the Senate shall appoint two committees, one to be called the Library General Commitee, and the other the Library Executive Committee.

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2. The General Committee shall consist of the Vice-Chancellor, the Registrar, and twelve members of the Senate.

The Executive Committee shall consist of the Vice-Chancellor, the Registrar, and three members of the General Committee.

Members of the Committees shall hold office till the next Annual Meeting.

In the event of a vacancy occurring in the course of the year, it shall be at once filled up by the Syndicate.

3. The General Committee shall meet ordinarily once every six months, and, at other times, when convened by the Vice-Chancellor. Seven members shall form the quorum.

The Executive Committee shall meet ordinarily once a month, and at other times when convened by the Vice-Chancellor. Three members shall form the quorum.

4. The Proceedings of the meetings of the Committees shall be recorded, and regularly submitted to the Syndicate for confirmation. The Syndicate may approve, revise, or modify the decision of either Committee on any matter, or direct the Committee to review it.

5. The duties of the General Committee shall be—

(I) to recommend to the Syndicate rules regulating—

(*a*) the use of the Library by Fellows, by Registered Graduates, and by other persons,

(*b*) the payment of fees for the use of the Library by persons other than Fellows,

(*c*) the conditions of borrowing and returning books,

(*d*) the suspension of privileges for the loss, mutilation, or disfigurement of books, or for any breach of the Library Rules.

(*e*) the annual inspection of the Library, and

(*f*) all other matters relating to the management of the Library.

(II) to recommend to the Executive Committee the purchase of books and manuscripts.

6. The duties of the Executive Committee shall be to give orders for the purchase, arrangement and cataloguing of the books and manuscripts, for the provision of book-cases and other fittings, for the cleaning of the Library, and for all ordinary repairs, and generally to supervise the management of the Library, and to do all that is in their opinion desirable for the maintenance of the Library in an efficient condition, so far as it is practicable to do so within the limits of the annual grant.

7. Upon the recommendation of the Syndicate, the Senate shall annually make a grant for the Library, and may, if necessary, add to the grant in the course of the year.

8. The Syndicate shall make an annual report to the Senate

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concerning the state of the Library and all matters concerning the Library which in their opinion should be brought to the notice of the Senate. The Report shall be accompanied by a statement of the expenditure of all moneys devoted to the purposes of the Library.

CHAPTER XXIX.

TRANSITORY REGULATIONS.

1. In this chapter, the phrase "new Regulations" shall be taken to mean the present body of Regulations.

The phrases "existing Bye-laws," "existing Regulations," and "existing Rules" shall be taken to refer respectively to the Bye-laws, Regulations and Rules in operation on the date previous to that on which the new Regulations come into force.

2. All questions relating to the alteration or cancellation of existing Bye-laws, Regulations and Rules shall be decided with reference to the provisions of this Chapter.

Act VIII of 1904, sec. 25 (2) (q).

3. The new Regulations shall come into force on the date of their publication in the *Gazette of India*; such date shall be called the date of commencement of the new Regulations.

4. Except as hereinafter provided, on and from the date on which the new Regulations come into force, all existing

(*i*) Bye-laws,
(*ii*) Regulations, and
(*iii*) Rules which are in any way inconsistent with the new Regulations,

shall cease to have operation.

5. As soon as practicable after the date of commencement of the new Regulations the Vice-Chancellor shall cause steps to be taken for the appointment of the Faculties, the Syndicate, the Boards of Studies, the Board of Accounts the Library General Committee, the Library Executive Committee, the Transfer Committee, the Students' Residence Committee, the Registrar and the Inspector of Colleges, in accordance with the new Regulations:

Provided that any act which is required by the new Regulations to be done, at, before, or after an Annual Meeting, may for this purpose be validly done, at, before, or after a Special Meeting.

6. As soon as each of the Faculties, the Syndicate, each of the Boards of Studies, and the Board of Accounts is duly consti-

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tuted under Regulation 5, the corresponding body provisionally constituted under section 12 (*q*) of the Indian Universities Act, shall cease to exist.

Provided that each of these provisional Bodies so long as it continues to exist, shall discharge its functions in accordance with the existing Bye-laws, which shall be deemed to be in force for this purpose.

7. The Faculties, the Syndicate, the Boards of Studies, the Board of Accounts, the Library General Committee, the Transfer Committee, the Students' Residence Committee and the Library Executive Committee appointed under Regulation 5 shall continue to hold office till they are reconstituted in 1908 in accordance with the new Regulations.

8. The Registrar holding office at the commencement of the new Regulations shall continue to hold office till the Registrar appointed under Regulation 5 assumes charge. If, in the interval, there is a vacancy in the office of Registrar, the Syndicate may appoint an Acting Registrar on such terms as may be found necessary. The Registrar appointed under Regulation 5 shall continue to hold office not later than the 31st of March 1912.

9. The Inspector of Colleges appointed under Regulation 5 shall continue to hold office not later than the Annual Meeting of the Senate in 1912.

10. The Matriculation Examination shall be held for the first time in accordance with the new Regulations in 1910.

11. The Entrance Examination in 1907, 1908, and 1909, shall be held in accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

12. Any person who passes or has passed the Entrance Examination shall be deemed qualified for admission to any University Examination other than that mentioned in section 42 in the same manner as if he had passed the Matriculation Examination in accordance with the new Regulations.

13. The Intermediate Examination in Arts shall be held for the first time in accordance with the new Regulations in 1909.

14. The First Examination in Arts in 1907 and 1908 shall be held in accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

15. Any person who passes or has passed the First Examination in Arts shall be deemed qualified for admission to any University Examination other than that mentioned in Regulation 42 in the same manner as if he had passed the Intermediate Examination in Arts or the Intermediate Examination in Science in accordance with the new Regulations. For the purpose of the Examination mentioned in Regulation 42 of this chapter, a student who has passed the F.A. or the Intermediate in Arts, shall be deemed qualified in the same manner as a

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student who has matriculated in accordance with the new Regulations.

16. Any candidate who fails at the First Examination in Arts in 1908 or has failed in any previous year, or who was qualified to appear at any such examination but did not appear, or who was not sent up to any such examination by reason of deficiency in attendance at lectures or who was not permitted by the Principal of his College to appear, may be admitted to the Intermediate Examination in Arts or the Intermediate Examination in Science in 1909, provided he has prosecuted in accordance with the new Regulations a regular course of study for one academical year in the subjects he offers. Any candidate appearing at a subsequent examination shall strictly comply with the new Regulations.

17. The B.A. Examination shall be held for the first time in accordance with the new Regulations in 1909.

18. The B.A. Examination in 1907 and 1908 shall be held in accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

19. The M.A. Examination shall be held for the first time in accordance with the new Regulations in 1909.

20. The M.A. Examination in 1906, 1907 and 1908 shall be held in accordance with the existing Regulations and Rules which for this purpose shall be deemed to be in force.

21. Any Bachelor of Science who, in or before 1908, passes or has passed the M.A. Examination in Mathematics or in any branch of Natural or Physical Science, shall be entitled to the same privileges for the purpose of admission to University Examinations as if he had passed the M.Sc. Examination in accordance with the new Regulations.

22. The Examination for the Degree of Doctor of Philosophy shall be held for the first time in accordance with the new Regulations in 1907.

23. The Intermediate Examination in Science shall be held for the first time in accordance with the new Regulations in 1909.

24. The B.Sc. Examination shall be held for the first time in accordance with the new Regulations in 1909.

25. The B.Sc. Examination in 1907 and 1908 shall be held in accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

26. The M.Sc. Examination shall be held for the first time in accordance with the new Regulations in 1909.

27. The Examination for the Degree of Doctor of Science shall be held for the first time in accordance with the new Regulations in 1908.

28. The Examination for the Degree of Doctor of Science in 1906 and 1907 shall be held in accordance with the existing

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Regulations and Rules which, for this purpose, shall be deemed to be in force.

29. The Preliminary Examination in Law shall be held for the first time in accordance with the new Regulations in 1908.

30. The Final Examination in Law shall be held for the first time in accordance with the new Regulations in 1909.

31. The B.L. Examination in 1906, 1907 and 1908 shall be held in accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

32. (i) Any candidate who fails at the B.L. Examination in 1908, or has failed in any previous year, or who was qualified to appear at any such examination but did not appear, may, in any year not later than 1912, appear at the Preliminary Examination in Law, and if he passes, may appear at the Final Examination in Law in the same year or in any subsequent year not later than 1912.

(ii) Any candidate who is not or has not been sent up to the B.L. Examination of 1908 or of any previous year by reason of deficiency in attendance at lectures, shall be entitled to the same privileges as the candidates referred to in the preceding paragraph, provided he makes up his deficiency in accordance with the existing Regulations.

(iii) In any year subsequent to 1912 no person shall be admitted to either the Preliminary or the Final Examination in Law, except in strict conformity with the new Regulations.

33. The M.L. Examination shall be held for the first time in accordance with the new Regulations in 1907.

34. The Examination for Honours in Law in 1906 shall be held in accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force. Any candidate who may pass at such Examination shall be entitled to the same privileges as if he had passed the M.L. Examination in the first class under the new Regulations.

35. Up to 1907 the Degree of Doctor in Law shall be conferred in accordance with the existing Regulations, and in and after 1908 in accordance with the new Regulations.

36. The Preliminary Scientific L.M.S. Examination in accordance with the existing Regulations and Rules shall be held for the last time in 1907, and for this purpose those Regulations and Rules shall be deemed to be in force.

37. The First L.M.S. Examination in 1907, 1908 and 1909 (and in no subsequent year) shall be held in accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

38. The Second L.M.S. Examination in 1907, 1908, 1909, 1910 and 1911 (and in no subsequent year) shall be held in

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accordance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

39. Any candidate who fails in the Preliminary Scientific L.M.S. Examination in 1907 may appear at the Preliminary Scientific M.B. Examination in 1908 or 1909, provided he attends in an Affiliated College a regular course of lectures for one academical year, in the subjects in which he has failed as also in the additional subjects in which he has not previously attended any lectures. If any such candidate attains the standard laid down in the new Regulations, for the Preliminary Scientific M.B. Examination, he shall be declared to have passed that examination.

40. Any candidate who fails in the First L.M.S. Examination in 1909 may appear at the First M.B. Examination in 1910 or 1911, provided he attends in an Affiliated College a regular course of lectures for one academical year, (i) in the subjects in which he has failed, (ii) in any additional subjects in which he has not previously attended any lectures, and (iii) in the subject of Zoology as prescribed for the Preliminary Scientific M.B. Examination under the new Regulations. If such candidate attains the standard laid down in the new Regulations for the First M.B. Examination and also passes an examination in Zoology in the standard of the Preliminary Scientific M.B. Examination, he shall be declared to have passed the First M.B. Examination.

41. Any candidate who fails in the Second L.M.S. Examination in 1911 may appear at the second M.B. Examination in 1912 or 1913, provided he attends in an Affiliated College a regular course of lectures for one academical year in the subjects in which he has failed. If such candidate attains the standard laid down in the new Regulations for the Second M.B. Examination (Parts I and II or Part II only, as the case may be), he shall be granted a certificate of having passed the Second L.M.S. Examination.

42. The Preliminary Scientific M.B. Examination shall be held for the first time in accordance with the new Regulations in 1908. Provided that at the Examinations held in 1909 and 1910 no one shall be admitted who has not passed the F.A. Examination or the Intermediate in Arts or the Intermediate in Science.

43. The Preliminary Scientific M.B. Examination in 1907 and 1908 shall be held in accordance with the existing Regulations and Rules, which for this purpose, shall be deemed to be in force.

In 1908 there shall be two Examinations, one in accordance with the existing Regulations and the other in accordance with the new Regulations. For the latter no one shall be eligible who has not passed the F.A. Examination.

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44. The First M.B. Examination shall be held for the first time in accordance with the new Regulations in 1910.

45. The First M B. Examination in 1907, 1908 and 1909 shall be held in accordance with the existing Regulations and Rules which for this purpose shall be deemed to be in force.

46. The Final M.B. Examination shall be held for the first time in accordance with the new Regulations in 1913.

47. The Second M.B. Examination in 1907—1912 shall be held in accordance with the existing Regulations and Rules, which for this purpose shall be deemed to be in force.

48. The Examinations for Honours in Medicine, for the Degrees of Doctor of Medicine, Master of Surgery and Master of Obstetrics, and for the Diploma in Public Health, shall be held for the first time in accordance with the new Regulations in 1907.

49. The Examination for the Degree of Doctor of Medicine in 1906 shall be held in accordance with the existing Regulations, which, for this purpose, shall be deemed to be in force.

50. The Intermediate Examination in Engineering shall be held for the first time in accordance with the new Regulations in 1909.

51. In 1907, 1908 and 1909 the First Examination in Engineering shall be held in accordance with the existing Regulations and Rules, which for this purpose shall be deemed to be in force.

52. In 1910 and 1911, the First Examination in Engineering shall be held in accordance with the existing Regulations and Rules which, for this purpose, shall be deemed to be in force :

Provided, however, that at the examination in either of these years, only the following classes of candidates shall be allowed to appear :—

(*a*) Candidates who have failed at any previous F.E. Examination.

(*b*) Candidates who have not passed any examination higher than the Entrance or Matriculation Examination.

53. Any candidate who fails at the F.E. Examination in 1911 may be admitted to the Intermediate Examination in Engineering in 1912 or 1913.

54. Any person who passes or has passed the F.E. Examination shall be deemed qualified for admission to University Examinations in the same manner as if he had passed the Intermediate Examination in Engineering in accordance with the new Regulations.

55. The B.E. Examination shall be held for the first time in accordance with the new Regulations in 1911.

56. The B.E. Examination in 1907, 1908, 1909, and 1910 and the L.E. Examination in 1907-1912, shall be held in accord-

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ance with the existing Regulations and Rules, which, for this purpose, shall be deemed to be in force.

57. The Examination for Honours in Engineering shall be held for the last time in 1907 in accordance with the existing Regulations, which, for this purpose, shall be deemed to be in force.

58. Up to 1909 the Degree of Master in Engineering shall be conferred in accordance with the existing Regulations, which, for this purpose, shall be deemed to be in force.

59. The Degree of Doctor of Science (Engineering) may be conferred in 1907 in accordance with the new Regulations.

60. The Examination for Licentiate in Teaching and Bachelor of Teaching shall be held for the first time in 1908.

61. As soon as practicable after the commencement of the new Regulations, the Syndicate shall frame, subject to the approval of the Senate :—

(*a*) A revised body of Rules for the conduct of the examinations which, according to the preceding Regulations, have to be held in accordance with the existing Regulations ; and

(*b*) A body of Rules for the conduct of the examinations to be held in accordance with the new Regulations :

Provided that nothing in the Rules made under (*a*) shall contravene the existing Regulations, and nothing in the Rules made under (*b*) shall contravene the new Regulations.

62. Nothing in the Regulations contained in this Chapter shall be deemed to prohibit any alteration in the existing Regulations and Rules, provided such alteration is made by the Body competent in that behalf, and in the manner prescribed by the new Regulations.

63. Within eight weeks from the date when these Regulations come into force the Principal of every affiliated College shall forward to the Registrar the name of every student on the rolls of the College, together with the registration fee of Rs. 2 required for matriculation by Regulation 6 of Chapter XV. The Registrar shall, upon receipt of the fee, enter the name of every such student on the Register of University Students.

64. In any case not covered by the preceding Regulations of this Chapter, the Syndicate shall give such directions as may be justified by the special circumstances of the case.

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CHAPTER XXX.

MATRICULATION EXAMINATION.

1. The Matriculation Examination shall be held annually in Calcutta and in such other places as shall, from time to time, be appointed by the Syndicate, the approximate date to be notified in the Calendar.

2. Ordinarily, only students who have been educated for at least one school year previous to the date of the Matriculation Examination at a school recognised by the Calcutta University for such purpose, shall be admitted to the Matriculation Examination. Private candidates, who have not attended any school for at least one year previous to the Examination, shall also be admitted to the Examination, provided that (*a*) before appearing at such Examination they have passed a preliminary test held for such purpose by a Government Inspector of Schools, or under his orders, and (*b*) satisfactory evidence is adduced before the Inspector that the candidate has prosecuted a regular course of study, and has been subject to proper discipline.

3. No one shall be admitted to the Matriculation Examination, unless he shall have completed the age of sixteen years on the first day of the month in which he appears at the Examination.

4. Every candidate sent up for the Matriculation Examination by a recognised school shall be required to produce a certificate (*a*) of good conduct, (*b*) of diligent and regular study, (*c*) of having satisfactorily passed periodical school examinations and other tests, (*d*) of probability of passing the examination.

5. Every candidate for admission to the Matriculation Examination shall send in his application, with a certificate in the form prescribed by the Syndicate, either to the Registrar or to a local officer recognised by the Syndicate. Every such application must reach the office of the Registrar at least six weeks before the date fixed for the commencement of the examination.

6. A fee of twelve rupees shall be forwarded by each candidate with his application. A candidate who fails to pass, or to present himself for examination, shall not be entitled to claim a refund of the fee. He may be admitted to one or more subsequent Matriculation Examinations, subject to the conditions laid down in these Regulations.

7. The Matriculation Examination shall be conducted by means of printed papers, the same papers being used at every place at which the Examination is held.

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8. The Matriculation Examination shall be a general test of fitness for a course of University Studies.

9. Candidates for the Matriculation Examination shall be examined in the following subjects :—

1. English .. .. .. *Two papers.*
2. Mathematics .. .. .. *One paper.*
3. One of the following languages :—

   Sanskrit, Pali, Arabic, Persian (including an elementary knowledge of Arabic), Hebrew, Classical Armenian, Greek, Latin .. *One paper.*

4. Composition in one of the following vernacular languages :—

   Bengali, Hindi, Uriya, Assamese, Urdu, Burmese, Modern Armenian .. .. *One paper.*

   If the vernacular of a candidate is a language not included in the above list, he shall have an alternative paper in :—

   (*a*) English composition, or
   (*b*) French, or
   (*c*) German.

5 and 6. Two out of the following :—

(*i*) Additional Mathematics .. *One paper.*
(*ii*) An additional paper in the classical language taken up as subject No. 3 .. .. *One paper.*
(*iii*) History of India, including a short account of Administration of British India and of the Progress of India under British Rule .. *One paper.*
(*iv*) Outlines of General Geography, including the elements of Mathematical and Physical Geography : with the Geography of India in fuller detail .. *One paper.*
(*v*) Elementary Mechanics .. .. *One paper.*

Candidates who take up (*iii*) will be permitted to submit their answers in that subject in one of the following languages : English, Bengali, Hindi, Uriya, Assamese, Urdu, Burmese, or Modern Armenian.

Each paper shall be of three hours and shall carry 100 marks.

10. The Matriculation Examination in English shall be a test (*a*) of ability to write clear, simple, and correct English, (*b*) of intelligent comprehension of plain modern English on familiar subjects.

A small selection of books shall be recommended, as showing the standard up to which students will be expected to have read. The Examiners may or may not, at their option, set passages from such books.

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The first paper in English at the Matriculation Examination shall include passages in one of the following vernaculars for translation into English :—

Bengali, Hindi, Uriya, Urdu, Burmese, Modern Armenian, Parbatia, Assamese, and Khasi.

The Syndicate shall have power to add to this list.

11. As soon as possible after the Examination the Syndicate shall publish a list of the candidates who have passed arranged in three divisions, each in alphabetical order. Every candidate shall on passing receive a certificate in the form entered in Appendix A.

12. The limits of the subjects are defined below, and books shall be recommended, when necessary, to indicate the standard and extent of knowledge required in the different subjects.

ENGLISH.

1. Questions shall be set under the following heads, namely :—

(*a*) Simple unseen passages (*i.e.*, from other sources than the books recommended).

(*b*) Grammar and composition.

(*c*) Translation from one of the recognised vernaculars into English.

(*d*) Simple Essays.

Questions may also be set on—

(*e*) Passages from the books recommended.

2. Candidates may be asked to explain, summarise, or paraphrase the passages set, or to answer any question thereon which will test their understanding of the meaning or the construction. Historical, geographical, and literary allusions shall be excluded.

3. The head "Grammar and Composition" shall include (*a*) questions involving the practical application of the elementary rules of Grammar, (*b*) questions on the right use of words and phrases, and (*c*) exercises in composition.

4. Passages for translation may be narrative or descriptive, or may consist of simple conversations on ordinary subjects. They must be such as may be easily rendered from the one language into the other. They shall, where possible, be taken from recognised vernacular authors; and they shall not consist of any translation made for the purpose of the examination, from English into the vernacular.

5. Two Essays shall be set, giving in the one case not merely the subject, but also headings under the subject, for the candi-

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dates to expand in their own words, and in the other merely the subject without headings.

6. The distribution of the heads and of marks in the two papers shall be as follows :—

Paper I.—Translation from a vernacular into English: three passages shall be set, of which two only must be attempted .. .. .. 70 *marks.*
Two Essays, each carrying 15 marks .. 30 *marks.*
Paper II.—(*a*) Passages, if any, from recommended books, and (*b*) unseen passages: not more than half the marks shall be allotted to (*a*) .. .. 70 *marks.*
Grammar and Composition .. .. 30 *marks.*

MATHEMATICS.

Compulsory paper.

(A) *Arithmetic.*—The four Simple Rules, Vulgar and Decimal Fractions, Reductions, Practice, Proportion, Simple Interest. Problems more easily solvable by Algebra should not be required to be solved arithmetically.

(B) *Algebra.*—The four Simple Rules, Proportion, Simple Equations, Greatest Common Measure, Least Common Multiple, Graphs of Simple Equations.

(C) *Geometry.*—

PRACTICAL.

Bisection of angles and of straight lines.
Construction of perpendiculars to straight lines.
Construction of an angle equal to a given angle.
Construction of parallels to a given straight ine.
Construction of triangles with given parts.
Division of a straight line into a given number of equal parts.
Construction of a parallelogram equal to a given triangle, and having one of its angles equal to a given angle.
Construction of a triangle equal in area to a given rectilineal figure.
Construction of a tangent to a circle.
Easy extensions of these constructions may be given as problems.
Candidates may be required to give the reasons for any particular construction involved in any question.

Every candidate is required to provide himself with the following :—a hard pencil, dividers, pencil compasses, and a straight ruler showing centimetres and inches.

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THEORETICAL.

Angles at a point.

If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles, and the converse.

If two straight lines intersect, the vertically opposite angles are equal.

Parallel straight lines.

If a straight line, cutting two other straight lines, makes—

(i) the alternate angles equal,
(ii) two corresponding angles equal,
(iii) the interior angles on the same side of the line supplementary,

then the two straight lines are parallel; and the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

Triangles and rectilineal figures.

The sum of the angles of a triangle is equal to two right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

Two triangles are equal in every respect—

(i) If two sides and the included angle of one triangle are respectively equal to two sides and the included angle of the other.
(ii) If two angles and a side of the one triangle are respectively equal to two angles and the corresponding side of the other.

If two sides of a triangle are equal, the angles opposite to these sides are equal, and the converse.

Two triangles are equal in every respect if the three sides of one triangle are respectively equal to the three sides of the other.

Two right-angled triangles are equal in every respect if they have their hypotenuses equal, and one side of the one equal to one side of the other.

If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and the converse.

Any two sides of a triangle are together greater than the third.

Of all the straight tines that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest.

The opposite sides and angles of a parallelogram are equal;

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each diagonal bisects the parallelogram, and the diagonals bisect one another.

If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are equal.

Areas.

Parallelograms on the same or equal bases and of the same altitude are equal in area.

Triangles on the same or equal bases and of the same altitude are equal in area.

Equal triangles on the same or equal bases are of the same altitude.

Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities :—

$$k\ \ (a+b+c+\ldots) = ka + kb + kc + \ldots$$
$$(a+b)^2 = a(a+b) + b(a+b).$$
$$a(a+b) = a^2 + ab.$$
$$(a+b)^2 = a^2 + 2ab + b^2.$$
$$(a-b)^2 = a^2 - 2ab + b^2.$$
$$a^2 - b^2 = (a+b)\ (a-b).$$

The square on a side of a triangle is greater than, equal to, or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse, right, or acute. The difference in the cases of inequality is twice the rectangle contained by one of the two sides and the projection on it of the other.

Loci.

The locus of a point which is equidistant from two fixed points is the perpendicular bisector of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

The Circle.

A straight line drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord ; conversely, the perpendicular to a chord from the centre bisects the chord.

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There is one circle, and one only, which passes through three given points not in a straight line.

In equal circles (or in the same circle) (i) if two arcs subtend equal angles at the centre, they are equal, (ii) conversely, if two arcs are equal, they subtend equal angles at the centre.

In equal circles (or in the same circle) (i) if two chords are equal, they cut off equal arcs, (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

Equal chords of a circle are equidistant from the centre; and the converse.

The tangent at any point of a circle is perpendicular to the radius through the point.

If two tangents are drawn to a circle from an external point (i) they are equal, (ii) they subtend equal angles at the centre of the circle.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal; and if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

The angle in a semi-circle is a right angle; the angle in a segment greater than a semi-circle is less than a right angle; and the angle in a segment less than a semi-circle is greater than a right angle.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and the converse.

If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle, the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

Each question on Theoretical Geometry shall consist of a theorem contained in the above schedule together with an easy deduction.

Any proof of a proposition shall be accepted, which appears to the Examiners to form part of a systematic treatment of the subject, but proofs of theorems, should, as far as possible, be based on first principles; the order in which the theorems are stated in the above schedule is not to be regarded as essential.

In the proof of theorems and deductions from them, it shall be permissible to use hypothetical constructions.

The ordinary symbolical abbreviations may be used.

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SANSKRIT.

Compulsory paper.

1. The course shall include simple pieces in prose and verse selected from the following works :—Hitopadesa, Panchatantra, Rámáyana, Mahábhárata and Vishnu Purána. To the above list other works may, from time to time, be added by the Syndicate on the recommendation of the Board of Studies in Sanskrit. The selections shall be prescribed and prepared by, and be the property of the University, and they shall be notified two years before the examination for which they are prescribed.

2. A book of Elementary Sanskrit Grammar shall also be prepared and prescribed by the University and be its property.

3. The marks in the compulsory paper in Sanskrit shall be distributed as follows :—

(i) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions, and (*b*) questions on the subject matter of the texts. 50 *marks.*

Under this head simple translation from the text shall in no case carry more than 25 marks.

(ii) Questions involving the practical use of the elementary rules of Grammar, including passages containing grammatical errors for correction .. 25 *marks.*

(iii) Translation of simple sentences from English into Sanskrit; such sentences shall in no case be translations of portions of the prescribed texts. 25 marks.

PALI.

Compulsory paper.

1. The course in Pali shall include simple pieces in Prose and Poetry selected from the undermentioned works of the Khuddaka Nikáya of the Sutta Pitaka and from the Dipavamsa :—

Prose—Játaka.

Poetry—Khuddakapátha, the Dipavamsa.

To the above list other works may, from time to time, be added by the Syndicate on the recommendation of the Board of Studies in Sanskritic Languages.

The selections shall be notified two years before the examination for which they are prescribed.

2. Grammars will be recommended from time to time and a general knowledge of the following shall be demanded from the candidate : — (*a*) *Sandhi-kappa*, (*b*) *Náma-kappa*, including

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Sabda-rupa, *Karaka*, *Samása* and *Taddhita*, (*c*) *Akhyáta*, and (*d*) *Kita-kappa* excluding *Unádi*.

3. The marks in the compulsory paper in Pali shall be distributed as follows :—

(1) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions and (*b*) questions on the subject-matter of the texts .. .. .. 50 *marks*.

Under this head simple translation from the text shall in no case carry more than 25 marks.

(2) Questions involving the practical use of the elementary rules of Grammar, including passages containing grammatical errors for correction. .. 25 *marks*.

(3) Translation of simple sentences from English into Pali. Such sentences shall in no case be translations of portions of the prescribed texts. .. 25 *marks*.

ARABIC.

Compulsory paper.

1. The course in Arabic shall include prose selections from the following works :—

The Qor'án ; Alif Layla and Tabari's History.

The selections, which will be chosen with a view to avoiding difficult and obscure passages, shall be prepared by and be the property of the University.

2. The course shall include the general principles of Arabic Grammar according to modern methods ; and the University shall prepare and prescribe an Arabic Grammar, which shall be its property.

3. The marks in the compulsory paper in Arabic shall be distributed as follows :—

(1) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions, and (*b*) questions on the subject-matter of the texts.. .. .. .. 50 *marks*.

Under this head, simple translation from the text shall in no case carry more than 25 marks.

(2) Questions involving the practical use of the elementary rules of Grammar, including passages containing grammatical errors for correction .. 25 *marks*.

(3) Translation of simple sentences from English into Arabic : such sentences shall in no case be translations of portions of the prescribed texts .. 25 *marks*.

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PERSIAN.

Compulsory paper.

1. The course in Persian shall include selections from the following works :—

Prose.—Gulistán, Siyásat Námah, Baháristán, and the Safar Námah of Násir-i-Khusrau.

Poetry.—Khamsa of Nizámi, Pand Násmah of 'Attár, Masnaviyat of Hazín, Díván of Khusrau of Delhi.'

It shall also include a few easy passages in Arabic Prose.

The selections shall be prescribed and prepared by the University and be its property.

2. The course shall further include the principles of Persian Grammar and composition, and the elements of Arabic Grammar, with special reference to the formation of words.

Grammars shall be recommended by the Board of Studies concerned.

The marks in the compulsory paper shall be distributed as follows :—

(1) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions, and (*b*) questions on the subject-matter of the texts .. .. .. 50 *marks.*

From 15 to 20 marks shall be assigned to questions on the Arabic portion of the selections.

Simple translation from the text shall in no case carry more than 25 marks.

(2) Questions involving the practical use of the elementary rules of Grammar, including passages containing grammatical errors for correction .. 25 *marks.*

From 10 to 15 marks shall be assigned to purely Arabic Grammar.

(3) Translation of simple sentences from English into Persian ; such sentences shall in no case be translations of portions of the prescribed texts .. 25 *marks.*

ARMENIAN.

Compulsory paper.

1. The course shall consist of the following :—

Elishe's History of the War of the Vardanians. Parts I and II.

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Elishe Vardapiet Doorian's "Course of Classical Armenian." Part I [Prose and Verse].

2. Grammars will be recommended by the Board of Studies.

3. The marks in the compulsory papers in Armenian shall be distributed as follows :—

(1) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions, and (*b*) questions on the subject-matter of the texts.. .. .. .. 50 *marks.*

Under this head, simple translation from the text shall in no case carry more than 25 marks.

(2) Questions involving the practical use of the elementary rules of Grammar, including passages containing grammatical errors for correction .. 25 *marks.*

(3) Translation of simple sentences from English into Armenian : such sentences shall in no case be translations of portions of the prescribed texts .. 25 *marks.*

HEBREW.

Compulsory paper.

1. The course shall include selections from Genesis, Isaiah and the Psalms.

To the above list other portions of the Old Testament may from time to time be added by the Syndicate on the recommendation of the Board of Studies in Hebrew, who shall also recommend Grammars. The course shall be notified two years before the Examination for which it is prescribed.

2. The marks in the compulsory paper in Hebrew shall be distributed as follows :—

(1) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions and (*b*) questions on the subject-matter of the texts.. .. .. .. 50 *marks.*

Under this head, simple translation from the texts shall in no case carry more than 25 marks.

(2) Questions involving the practical use of the elementary rules of Grammar, including passages containing grammatical errors for correction .. 25 *marks.*

(3) Translation of simple sentences from English into Hebrew ; such sentences shall in no case be translations of portions of the prescribed texts.. 25 *marks.*

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GREEK.

Compulsory paper.

1. The course in prose shall consist of suitable portions of Xenophon, Lucian, and the New Testament.

The course in verse shall consist of suitable portions of Euripides. The course shall be notified two years before the examination for which it is prescribed.

2. The marks in the compulsory paper in Greek shall be distributed as follows :—

(1) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions, and (*b*) questions on the subject-matter of the texts.. .. .. .. 50 *marks.*

Under this head, simple translation from the text shall in no case carry more than 25 marks.

(2) Translation of unseen passages from Greek into English .. .. .. 35 *marks.*

(3) Translation from English into Greek. .. 15 *marks.*

LATIN.

Compulsory paper.

1. The course in prose shall consist of suitable portions of Cæsar or Sallust.

The course in verse shall consist of suitable portions of Ovid or Virgil's Æneid. The course shall be notified two years before the examination for which it is prescribed.

2. The marks in the compulsory paper in Latin shall be distributed as follows :—

(1) Passages from the prescribed texts for translation into English, together with (*a*) grammatical questions, and (*b*) questions on the subject-matter of the texts.. .. .. .. 50 *marks.*

Under this head, simple translation from the text shall in no case carry more than 25 marks.

(2) Translation of unseen passages from Latin into English .. .. .. 25 *marks.*

(3) Translation from English into Latin .. 25 *marks.*

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VERNACULARS.

1. In the case of each of the Vernaculars the Syndicate shall prescribe, on the recommendation of the Board of Studies, a small number of standard works (not exceeding six) to be read as models of style.

2. The examination shall include :—

(*a*) Translation from English into the Vernacular 40 *marks*.
(*b*) Questions on composition .. .. 20 *marks*.
(*c*) An essay—headings being given .. 40 *marks*.

3. Candidates shall not be asked to answer any questions on the subject-matter of the books recommended or on the history of vernacular literature.

4. The alternative paper in English shall be an advanced paper in composition, including the elements of Rhetoric and Prosody.

5. The papers in French and German shall consist of prose passages for translation into English, and one or more easy pieces for translation from English.

No text-books shall be prescribed, but a number of works shall from time to time be recommended as indicating the standard up to which candidates will be expected to have read.

MATHEMATICS.

Additional paper.

In addition to the Syllabus for the Compulsory paper, the following :—

(A) *Arithmetic.*—Extraction of Square Root; Exercises in the Metric System; Approximation to a specified degree of accuracy.

(B) *Algebra.*—Quadratic Equations with one unknown quantity; Extraction of Square Root; Graphs of Pure Quadratic Equations (excluding constructions with different scales along two axes); Arithmetical and Geometrical Progressions; The Elementary Laws of Indices.

(C) *Geometry*—

PRACTICAL.

Simple cases of the construction of circles satisfying given conditions.

Construction of regular figures of 3, 4, 5, or 6 sides in or about a given circle.

Construction of a square equal in area to a given rectangle.

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THEORETICAL.

Proportion : Similar Triangles.

If a straight line is drawn parallel to one side of a triangle, the other two sides are divided proportionally ; and the converse.

If two triangles are equiangular, their corresponding sides are proportional ; and the converse.

If two triangles have one angle of the one equal to one angle of the other, and the sides about these equal angles proportional, the triangles are similar.

If a polygon is divided into triangles by a line joining a given point to its vertices, any similar polygon can be divided into corresponding similar triangles.

The ratio of the areas of two similar triangles or of two similar polygons, is equal to the ratio of the squares on the corresponding sides.

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle ; and likewise the external bisector externally.

SANSKRIT.

Additional paper.

In the additional paper in Sanskrit the marks shall be distributed in the following manner :—

(1) Further questions on the text, in which simple translation from the text shall not carry more than 10 marks .. .. .. 20 *marks.*
(2) Simple unseen passages for translation from Sanskrit into English .. .. .. 30 *marks.*
(3) Questions on Grammar .. .. 25 *marks.*
(4) Translation from English into Sanskrit .. 25 *marks.*

PALI.

Additional paper.

In the additional paper in Pali the marks shall be distributed in the following manner :—

(1) Further questions on the text, in which simple translation from the text shall not carry more than 10 marks .. .. .. 20 *marks.*

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(2) Simple unseen passages for translation from Pali into English .. .. .. 30 *marks.*
(3) Questions on Grammar .. .. 25 *marks.*
(4) Translation from English into Pali .. 25 *marks.*

ARABIC.

Additional paper.

In the additional paper in Arabic the marks shall be distributed in the following manner :—

(1) Further questions on the text, in which simple translation from the text shall not carry more than 10 marks .. .. .. 20 *marks.*
(2) Simple unseen passages for translation from Arabic into English .. .. .. 30 *marks.*
(3) Questions on Grammar .. .. 25 *marks.*
(4) Translation from English into Arabic .. 25 *marks.*

PERSIAN.

Additional paper.

In the additional paper in Persian the marks shall be distributed in the following manner :—

(1) Further questions on the text, in which simple translation from the text shall not carry more than 10 marks .. .. .. 20 *marks.*
(2) Simple unseen passages for translation from Persian into English .. .. .. 30 *marks.*
(3) Questions on Persian Grammar .. 10 *marks.*
(4) Questions on Arabic Grammar.. .. 15 *marks.*
(5) Translation from English into Persian .. 25 *marks.*

ARMENIAN

Additional paper.

In the additional paper in Armenian the marks shall be distributed in the following manner :—

(1) Further questions on the text, in which simple translation from the text shall not carry more than 10 marks .. .. .. 20 *marks.*
(2) Simple unseen passages for translation from Armenian into English .. .. .. 30 *marks.*
(3) Questions on Grammar .. .. 25 *marks.*
(4) Translation from English into Armenian .. 25 *marks.*

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HEBREW.

Additional paper.

In the additional paper in Hebrew the marks shall be distributed in the following manner :—

(1) Further questions on the text, in which simple translation from the text shall not carry more than 10 marks .. .. .. 20 *marks.*
(2) Simple unseen passages for translation from Hebrew into English .. .. .. 30 *marks.*
(3) Questions on Grammar .. .. 25 *marks.*
(4) Translation from English into Hebrew .. 25 *marks.*

LATIN AND GREEK.

Additional papers.

In the additional papers in Latin and Greek the marks shall be distributed in the following manner :—

(1) Further questions on the text, in which simple translation from the text shall not carry more than 10 marks .. .. .. 20 *marks.*
(2) Unseen passages from Greek or Latin into English .. .. 30 *marks.*
(3) Unseen passages from English into Greek or Latin .. .. .. 30 *marks.*
(4) Questions on Grammar .. .. 20 *marks.*

HISTORY.

History of India.

The physical features of the country.
The aborigines of India. Immigrations from the north-east and north-west.
The Aryans. The Indo-Aryans.
The Vedas. Relation of the Rig-Veda to other Vedas.
The Brahmanas. The Smritis. Manu.
The caste system.
Buddha and Buddhism.
Mahavira and the Jains.
The kingdoms of Kosala and Magadha: the empire of the Nandas.
Invasion of Alexander the Great.
Accounts of India given by Greek writers.
The Maurya empire. Chandra Gupta. Asoka.

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The Kusana empire; Kanishka. The Saka era. The Gupta empire; Buddhist architecture and the Fine Arts. Chinese pilgrims. Kalidas. Vikramaditya; the Vikrama era.

Rise of the Rajputs.

Mahomedan conquest of Sind and the Punjab; Mahmud of Gazni.

Hindu civilisation on the eve of the Mahomedan rule in India.

The Pathan dynasties. Muhammad Ghori. Qutb-ud-Din. Altamish. Razia. Mogul invasion.

Conquest of Gujarat, Malwa, and the Deccan; incursions into Southern India. Ala-ud-Din.

The Tughlak dynasty. Muhammad Tughlak; Firuz Tughlak. Timur's invasion. Break-up of the Pathan empire; the Mahomedan kingdoms of Delhi, Bengal, Jaunpur, Gujarat, the Deccan; and the Hindu kingdoms of Vijayanagar, Meywar and Orissa.

Rise of religious sects under Pathan rule: Ramananda, Kabir, Nanak, Chaitanya. Spread of Mahomedanism. Pathan architecture; the Urdu language; Indian literature in Pathan times.

The Mogul dynasty: Baber; Humayun; Sher Shah; Restoration of Humayun.

Akbar: Todar Mal; Abul-Fazl.

Jehangir; Nur Jehan; Sir Thomas Roe; Shah Jehan; Bernier; Mogul architecture.

Aurangzeb; Rajput revolt; his treatment of the Hindus; Sivaji and the Mahrattas; Break-up of the Mogul empire.

The successors of Aurangzeb: revolt of the provinces; invasions of the Mahrattas; invasions of Nadir Shah and Ahmed Shah Abdali. Struggle for supreme power between Mahomedans and the Mahrattas; the Mahratta confederacy; extent of Mahratta dominion. Contact of the Mahrattas with the English.

The Europeans in India; discovery of the Cape route to India by the Portuguese. The Dutch, the French and the English Merchant Companies, and early Settlements. First character of the East India Company.

The French in India, Dupleix. The English in India; Clive; English wars and the territorial acquisitions in Madras, Bengal, and Bombay. Plassey; the Dewani. Early History of Calcutta. Clive's system of administration. Warren Hastings: his financial, revenue and judicial reforms; his relations with native powers.

The Regulating Act; Warren Hastings, first Governor-General; extent of British dominion in his time.

Pitt's India Act; Lord Cornwallis; his administrative reforms; the permanent settlement. Sir John Shore; his non-intervention policy.

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Lord Wellesley ; his wars with Mysore and with the Mahrattas ; the system of Subsidiary Treaties.

Lord Minto ; state of Central India ; extension of relations of British Indian Government with foreign powers outside India ; renewal of the Company's Charter.

Lord Hastings ; his wars with Nepal and with the Mahrattas. Lord Amherst ; the first Burmese war.

Lord William Bentick ; his social and administrative reforms ; renewal of the Company's Charter. Sir Charles Metcalfe. Lord Auckland ; his policy ; the First Afghan War. Lord Ellenborough ; the Sind War. Lord Hardinge ; the first Sikh War.

Lord Dalhousie ; the second Sikh War ; the doctrine of Lapse and the Annexation policy ; the second Burmese War. Material progress of the country under Dalhousie.

Lord Canning ; the Indian Mutiny, probable causes ; the assumption of direct Government by the Crown ; the Queen's Proclamation.

India under the Viceroys : Financial reforms ; the Orissa Famine and other great famines ; the Second and Third Afghan Wars ; the Third Burmese War ; delimitation of Frontier boundaries.

The Mahrattas : their rise ; Sivaji and his successors ; Mahrat ta system of war, administration, and revenue ; rise of the Peshwas ; Baji Rao ; his successors ; origin of the chief existing Mahratta states.

Mysore : an ancient Hindu kingdom ; Hyder Ali ; his wars with the Mahrattas, the Nizam and the English ; Tippu Sultan ; Restoration of the Hindu dynasty.

The Sikhs : their origin and religion ; Guru Govinda ; their struggle with Ahmed Shah Abdali ; Ranjit Singh ; his conquests ; the Khalsa ; Ranjit Singh's successors.

Progress of India under British Rule.

1. *Earliest declarations of principles of English rule.*—Variety of races and religions, and of conflicting interests : these interests subordinated to one great common interest that all have as subjects and citizens of one State. No ruling caste in India. The Queen's Proclamation.

2. *Respect for indigenous ideas and institutions.*—Freedom of faith and worship for all classes. No interference with seats of Oriental learning. Their encouragement in latter times. Hindu Law applicable to Hindus, and Mahomedan Law to Mahomedans in certain classes of cases. Methods of land settlement. Early Village Police. Punchayets. Early methods of judicial administration.

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3. *Advanced Western ideas and institutions adapted and introduced as an agency of progress.*—

I. *Political.*—Codes embodying the most modern English juridical ideas. Open administration of justice. Equality of all men in the eye of the law. Litigious system of criminal procedure. The right of prisoners to be defended by counsel. No conviction or sentence without a trial. Trial by jury. Varieties of Local Self-Government. Progress of the elective system.

II. *Social.*—Social practices of a criminal character not tolerated. Abolition of *suttee*, of infanticide, of hook swinging. Legalisation of the re-marriage of Hindu widows. Removal of disabilities of Hindus from conversion to Christianity. Female Education. Laws in regard to decency and morals.

III. *Educational.*—Primary, secondary, and higher education. Higher Education through the medium of the English language. Religious neutrality in education. Education open to all castes, races and sects. Scientific, technical and artistic education. Research. Education in foreign countries. Universities. Libraries. Museums. Learned Societies. Preservation of ancient records. Encouragement of authors.

IV. *Economic.*—Encouragement of industries. Free trade. Protective works against famine. Famine relief. Remission of revenue. Measures for the benefit of ryots. Agricultural Banks. Savings Banks. Protection of inventions. Industrial Exhibitions. Free scope for commercial and industrial enterprise.

V. *Material.*—Reclamation of waste lands. Railways. Telegraphs. Irrigation Works. Mills. Factories. Dockyards. Tanks. Wells. Bridges. Landing-places. Roads. Harbours. Fortifications. Sanitation. Measures for dealing with epidemics. Geological and other surveys. Forest laws. Mining operations. Preservation of ancient monuments.

VI. *Civic.*—Freedom of the Press. Right of public meeting. Right of petitioning. Eligibility to appointments in the public service and to honorary offices. Openness of the professions.

VII. *General.*—A high standard of general efficiency in the administration. Repression of thuggy and dacoity. Increased security of life and property. Widened spheres of popular activity. Awakening of a new national life.

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The Present Administration of India.

Defence :—the Indian Army, and the British Naval Squadron in Indian waters.

Agencies for the maintenance of order :—the Magistracy and the Police.

The Viceroy and Governor-General of India : his responsibility to the Secretary of State : his Executive and Legislative Councils.

Constitution of various Provincial Governments.

Administration of Justice, Judicial Committee of the Privy Council the Highest Court of Appeal.

The High Courts established by Charter granted by the King in Parliament. Chief Courts established by the Government of India. District Courts ; Civil and Criminal.

Chief sources of Revenue : —The Land Revenue : the Permanent, Raiyatwari and Talukdari Settlements : Salt and Opium Monopolies : Excise Duties : Import Duties : Income Tax : Direct and Indirect taxes.

Chief heads of Expenditure.

Local Self-Government ; Municipalities ; District Boards ; Local Boards ; Unions ; Panchayats.

The Native States and the general nature of their connection with the British Government by subsidiary treaties : Hyderabad, Mysore, Kashmir, Gwalior, Baroda. Smaller States under an Agent to the Governor-General : names of these Agencies. Some small States under the control of the Provincial Governors.

A text-book on the present Administration of India and on the Progress of India under British Rule shall be prepared and prescribed by the University and be its property.

No text-books shall be prescribed on the historical portion of the Syllabus, but the Board of Studies shall, from time to time, recommend suitable books to indicate the standard of knowledge required.

GEOGRAPHY.

(*i*) General.

(*a*) The Earth's shape ; day, night, and the seasons.

Divisions of the Earth's surface ; Latitude, and Longitude.

The compass ; simple map-making ;

Land-forms, and the action of climatic forces on them.

The general relief of the Globe, *i.e.*, the great slopes of the world as forming the continental water-partings, and deciding the general distribution of rainfall.

The great oceans of the world, and their relation to the great water-partings ; winds, tides, and currents.

(*b*) Outlines of the Political Geography of the World.

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(ii) SPECIAL.

Political and General Geography of India and Burma, including the following points :—

1. *Natural regions and surface features.*
2. *Distribution of rocks and economic minerals.*

Action of weather on rocks. Formation of soil. The work of rain and rivers. Alluvium.

3. *Climate.*
4. *Vegetation.*

Forest, pasture land, agricultural land, desert. Areas rendered cultivable by systems of irrigation. The distribution of teak, sal, and cocoanut trees; of rice, millet, wheat; of cotton, tea and jute.

5. *Animal Life.*

The principal animals and their distribution.

6. *Industries.*

The leading industries and their location. Circumstances favouring their growth.

7. *Population.*

Approximate number and density. Distribution of races, languages, and religions. Agricultural and non-agricultural elements of the population.

8. *Means of communication.*

The chief roads, waterways, and railways, and mountain passes.

9. *Commerce.*

The principal commodities exchanged and the countries of exchange. The chief ports, and their leading imports and exports.

ELEMENTARY MECHANICS.

I.—MOTION.

Varieties of motion.
Elementary notions of velocity and acceleration.
Motion of a body with constant acceleration.
Composition and resolution of motions.
Bodies falling freely under gravity.
Special cases of bodies falling under gravity (inclined plane, projection in any direction, etc.).

II.—FORCE.

Elementary notions of mass, inertia, momentum.
Force measured by rate of change of momentum.
Units of force; poundal, dyne.
Relation between mass and weight.

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Atwood's machine.
Impulsive forces—impulse.
Newton's laws of motion.
Balancing of forces.
Conditions for the equilibrium of three forces not parallel.
Triangle and parallelogram of forces.
Moments.
Conditions for the equilibrium of three parallel forces.
Composition and resolution of parallel forces in one plane. Centre of parallel forces.
Centre of gravity. Mass-centre. Position of centre of gravity in stable and unstable equilibrium.
Methods of finding the centre of gravity of systems of particles in elementary cases.
Mass-centre of a triangle—of the perimeter of a triangle—of two bodies, whose individual mass-centres are given.
Illustrations of conditions of equilibrium in simple machines; levers; balance; pulleys; inclined plane.

The subject is to be treated mainly experimentally. No knowledge of mathematics except such as may be necessary for elucidating experiments and as may fall within the limits of the Matriculation Mathematics, compulsory and additional, shall be required.

GENERAL.

1. In order to pass the Matriculation Examination a candidate must obtain—

(i) In English, either :—
In the first paper 40 marks, and in the aggregate of the two papers 72 marks ; or in the aggregate of the two papers 80 marks.
(ii) In the vernacular paper, or in the paper alternative to it, 36 marks.
(iii) In the compulsory Classical language paper, 30 marks.
(iv) In the compulsory Mathematical paper 30 marks, and in the aggregate of all the papers, 250 marks.

Provided that if less than 30 *marks* are obtained in any of the additional papers or subjects, such marks shall not be included in the aggregate.

2. Candidates who obtain 350 marks in the aggregate shall be placed in the First Division, and those who obtain 280 in the Second Division.

3. Any candidate who has failed in one subject only, and by not more than 5 per cent. of the full marks in that subject, and

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has shown merit by gaining 350 marks shall be allowed to pass. In order to determine the Division in which such a candidate will be placed and his place in the Division, the number of marks by which he has failed in one subject shall be deducted from his aggregate.

4. If the Moderators are of opinion that, in the case of any candidate not covered by the preceding Regulations, consideration ought to be allowed by reason of his high proficiency in a particular subject or in the aggregate, they shall report the case to the Syndicate, and the Syndicate may pass such candidate.

CHAPTER XXXI.

INTERMEDIATE EXAMINATION IN ARTS.

1. The Intermediate Examination in Arts shall be held annually in Calcutta and in such other places as shall, from time to time, be appointed by the Syndicate, the approximate date to be notified in the Calendar.

2. Any undergraduate of the University may be admitted to this examination, provided he has prosecuted a regular course of study in one or more Colleges affiliated for this purpose, for not less than two academical years after passing the Matriculation Examination.

Any student who has passed the Intermediate Examination in Science may take up the course for the Intermediate Examination in Arts at the second year's stage, and after one year's regular course of study in one or more Colleges affiliated for the purpose, appear at the examination. He will be excused attendance and examination in the subject or subjects in which he has already passed at the Intermediate Examination in Science.

3. Every candidate sent up for the Intermediate Examination in Arts by an affiliated College shall produce a certificate (*a*) of good conduct, (*b*) of diligent study, (*c*) of having satisfactorily passed the College periodical examinations and other tests, and (*d*) of probability of passing the examination. Every candidate for admission shall send in his application with a certificate in the form prescribed by the Syndicate either to the Registrar or to a local officer recognised by the Syndicate. Every such application must reach the office of the Registrar at least six weeks before the date fixed for the commencement of the Examination.

4. A fee of twenty-five rupees shall be forwarded by each candidate with his application. A candidate who fails to pass or to present himself for examination shall not be entitled to

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claim a refund of the fee. A candidate who fails to pass may be admitted to any one or more subsequent Intermediate Examinations in Arts on payment of a like fee of twenty-five rupees on each occasion, provided he produces a certificate from the Head of an affiliated College showing that he has prosecuted a regular course of study for one academical year since the date of the last examination, in each of the subjects in which he is to be examined.

5. The Intermediate Examination in Arts shall be conducted by means of printed papers, the same papers being used at every place at which the Examination is held.

6. As soon as possible after the Examination, the Syndicate shall publish a list of the candidates who have passed, arranged in three divisions, the first in order of merit, and the second and third in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

7. The subjects for the Intermediate Examination in Arts shall be—

1. English .. .. .. *Three papers.*
2. Composition in one of the following vernacular languages :—Bengali, Hindi, Uriya, Assamese, Urdu, Burmese, Modern Armenian .. *One paper.*

8. If the vernacular of a candidate is a language not included in the above list, he shall have an alternative paper of a somewhat advanced character in English.

3, 4 and 5. Three of the following subjects, of which two at least must be from group A :—

Group A.

One of the following languages :—

(i) Sanskrit, Pali, Arabic, Persian (with an elementary knowledge of Arabic), Hebrew, Classical Armenian, Greek, Latin, French, German.
(ii) History.
(iii) Logic.
(iv) Mathematics.

Group B.

(i) Physics.
(ii) Chemistry.
(iii) Geography.
(iv) Physiology.
(v) Botany.
(vi) Zoology.
(vii) Geology.

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There shall be two papers in each of the subjects enumerated under Groups A and B.

Every paper in every subject shall be of three hours, and shall carry 100 marks.

9. The Syllabus in Mathematics and in all the subjects in Group B shall be the same as that prescribed for the Intermediate Examination in Science.

10. No practical examination will be held by the University in connection with subjects in group B in the Intermediate Examination in Arts, but every student who desires to be examined in any such subject must produce a certificate from the Principal of his College to the effect that he has completed in an affiliated College the corresponding practical course prescribed by the Regulations.

11. The following are definitions of the limits of the above subjects :—

ENGLISH.

Paper I—Poetry texts.

Paper II—Prose texts.

Paper III (*a*) Essay, (*b*) Prosody and Rhetoric, (*c*) Questions on unseen passages from books of the same standard of difficulty as those recommended for the Matriculation Examination—

(*a*)	shall	carry	40	marks.
(*b*)	,,	,,	20	,,
(*c*	,,	,,	40	,,

VERNACULARS.

1. In the case of each of the Vernaculars the Syndicate shall prescribe, on the recommendation of the Board of Studies concerned, a small number of standard works (not exceeding six) to be read as models of style.

2. The examination shall include—

(*a*)	Translation from English into the Vernacular	40 *marks.*
(*b*)	Questions on composition	20 *marks.*
(*c*)	An essay—headings being given ..	40 *marks.*

3. Candidates shall not be asked to answer any questions on the subject-matter of the books recommended, or on the history of the Vernacular Literature.

4. If the vernacular of a candidate is a language not included in the prescribed list of vernaculars, he shall have an alternative paper in English.

5. The alternative paper in English shall be an advanced paper in composition including Rhetoric and Prosody.

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SANSKRIT.

1. The course in Sanskrit shall consist of selected passages in prose and verse. The texts in poetry shall include a portion of the Bhattikavya, and a portion either of the Raghuvansa or of the Kumar Sambhava. The texts in prose shall be taken from the Dasakumarcharita and the Mahabhárata.

2. The course shall also include the elements of Sanskrit Grammar, of which a fuller knowledge shall be required than at the Matriculation Examination. A text-book in Grammar shall be prepared and prescribed by the University and be its property.

3. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the Poetry texts. Not more than 25 marks shall be assigned to mere translation from the set texts .. .. .. 50 *marks.*

(*b*) Questions on Grammar, including passages for correction .. .. .. 25 *marks.*

(*c*) Passages for translation from English into Sanskrit. 25 *marks.*

Paper II.

(*a*) Questions on the prose texts. Not more than 15 marks shall be assigned to mere translation from the set texts .. .. .. 30 *marks.*

(*b*) Unseen Sanskrit passages for translation into English. 30 *marks.*

(*c*) Questions on Grammar .. .. 15 *marks.*

(*d*) Passages for translation from English into Sanskrit. 25 *marks.*

Questions on the texts shall comprise—

(*a*) Passages from the set texts for translation into English.

(*b*) Questions on the subject-matter of the text.

(*c*) Questions on the language of the text and grammatical questions relating thereto.

(*d*) Passages for translation into English from such standard Sanskrit commentaries on the set texts as may be prescribed from time to time.

4. Unseen passages shall consist of simple prose not exceeding in difficulty the prose texts set for the Matriculation Examination.

No questions shall be set on Prosody or Rhetoric.

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PALI.

1. The course in Pali shall consist of the whole of Anderson's Reader, and such other selections as may from time to time be prescribed by the Board of Studies in Sanskritic Languages.

2. The course shall also include a knowledge of Pali Grammar, of a higher standard than that required at the Matriculation Examination.

Grammars shall be recommended from time to time by the Board of Studies concerned.

3. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the Poetry texts. Not more than 25 marks shall be assigned to mere translation from the set texts .. .. .. 50 *marks.*

(*b*) Grammatical questions .. .. 25 *marks.*

(*c*) Passages for translation from English into Pali. 25 *marks.*

Paper II.

(*a*) Questions on the prose texts. Not more than 25 marks shall be assigned to mere translation from the set texts .. .. .. 50 *marks.*

(*b*) Unseen Pali passages for translation into English. 30 *marks.*

(*c*) Grammatical questions .. .. 20 *marks.*

Questions on the texts shall comprise—

(*a*) Passages from the set texts for translation into English.

(*b*) Questions on the subject-matter, and

(*c*) Questions on the language of the text.

Unseen passages shall consist of simple prose not exceeding in difficulty the texts set for the Matriculation Examination.

ARABIC.

1. The course in Arabic shall consist of such portions as may be prescribed by the Syndicate on the recommendation of the Board of Studies concerned, of the following works :—

The Qor'án,
Qalyúbí,
Kalíla and Dimna,
Ibn-al-Athír's History.

The selections shall be prepared by and be the property of the University.

2. The course shall also include Arabic Grammar, of which a fuller knowledge shall be required than at the Matriculation.

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A text-book in Grammar shall be prepared and prescribed by the University and be its property.

3. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the texts. Not more than 25 marks shall be assigned to mere translation .. 50 *marks.*

(*b*) Grammar, including passages for correction and unvocalised passages for vocalisation .. 30 *marks*

(*c*) Simple English passages for translation into Arabic. 20 *marks.*

Paper II.

(*a*) Questions on the texts .. .. 30 *marks.*

Not more than 15 marks shall be assigned to mere translation.

(*b*) Unseen passages of Arabic for translation into English. 30 *marks.*

(*c*) Questions on Grammar .. .. 15 *marks.*

(*d*) Simple English passages for translation into Arabic. 25 *marks.*

The passages for translation from English into Arabic shall in no case be translated portions of the prescribed text.

Questions on the texts shall comprise—

(*a*) Passages from the set texts into English.
(*b*) Questions on the subject-matter, and
(*c*) Questions on the language of the text.

The unseen passages shall consist of simple prose not exceeding in difficulty the texts set for the Matriculation Examination.

No questions shall be set on Prosody or Rhetoric.

PERSIAN.

1. The course in Persian shall consist of selected passages in prose and verse from the following works :—

Poetry.

The Sikandar-Nama of Nizámí,
The Kulliyát of Salmán Savejí,
Bostán of Sa'dí.

Prose.

The Anwár-i-Sohaylí.
The Zafar-Náma of Sharaf-ud-Dín 'Alí Yazdí.
Akhláq-i-Mushini.

The above list may from time to time be added to on the recommendation of the Board of Studies.

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The selections shall be prescribed and prepared by the University and be its property.

In addition to the above a portion of the Arabic selections for the Matriculation Examination shall form part of the Persian Course.

2. The course shall include Persian Grammar, and also Arabic Grammar to the extent and standard required for candidates who offer Arabic in the Matriculation Examination.

3. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on Persian Poetry texts .. 40 *marks.*

Not more than 20 marks shall be assigned to mere translation.

(*b*) Persian Grammar .. .. 10 *marks.*
(*c*) Arabic Grammar .. .. 20 *marks*
(*d*) Translation of prescribed Arabic passages into English. 30 *marks.*

In (*b*) and (*c*) passages shall be set for testing the practical application of grammatical rules.

Paper II.

(*a*) Questions on Persian Prose texts .. 20 *marks.*

Not more than 10 marks shall be assigned to mere translation.

(*b* Unseen passages for translation from Persian into English. 30 *marks.*
(*c*) Passages of simple English prose for translation into Persian .. .. .. 50 *marks.*

The passages for translation from English into Persian shall in no case be translated portions of the prescribed texts.

Questions on the Persian text shall comprise—

(*a*) Passages from the set texts for translation into English.
(*b*) Questions on the subject-matter, and
(*c*) Questions on the language of the text.

The unseen Persian passages shall consist of easy prose and verse not exceeding in difficulty the text prescribed for the Matriculation Examination.

No questions shall be set on Prosody or Rhetoric.

ARMENIAN.

1. The Course in Classical Armenian shall consist of—

Prose.

Moses of Khoren's History of Armenian, Part II.

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Poetry.

Elishe Vardapiet Doorian's Course of Classical Armenian, Part II.

The course shall also include Armenian Grammar, of which a fuller knowledge will be required than at the Matriculation Examination.

2. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the Prose Text .. 40 *marks.*

Not more than 20 marks shall be assigned to mere translation.

(*b*) Questions on Grammar, including passages containing errors for correction .. .. 20 *marks.*

(*c*) Passages for translation from English into Armenian. 40 *marks.*

Paper II.

(*a*) Questions on the Poetry Texts .. 40 *marks.*

Not more than 20 marks shall be assigned to mere translation.

(*b*) Unseen passages in Armenian for translation into English. 30 *marks.*

(*c*) Passages for translation from English into Armenian. 30 *marks.*

Questions on the texts shall comprise—

(*a*) Passages from the set texts for translation into English.
(*b*) Questions on the subject-matter, and
(*c*) Questions on the language of the text.

The unseen passages shall consist of simple prose not exceeding in difficulty the text prescribed for the Matriculation Examination.

HEBREW.

The course in Hebrew shall consist of prescribed selections from Genesis, Isaiah, Ruth and the Psalms.

The marks in the two papers shall be distributed in the same proportions as in the case of Armenian.

GREEK.

1. The course in Greek shall consist of suitable selections from the following prose writers and poets, to be prescribed from time to time by the Board of Studies concerned :—

Xenophon, Herodotus, Plato, Plutarch, Homer, Euripides and Sophocles.

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The course shall also include Attic Greek Grammar.

2. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the Prose selections .. 40 *marks.*

Not more than 20 marks shall be assigned to mere translation.

(*b*) Questions on the Poetry Selections .. 40 *marks.*

Not more than 20 marks shall be assigned to mere translation.

(*c*) Questions on Grammar .. .. 20 *marks.*

Paper II.

(*a*) Translation of simple passages from English into Greek. 30 *marks.*

(*b*) Unseen passages in Greek for translation into English. 70 *marks.*

Questions on the texts shall comprise—

(*a*) Passages from the set texts for translation into English.
(*b*) Questions on the subject-matter, and
(*c*) Questions on the language of the text.

The unseen passages shall not exceed in difficulty the selections set for the Matriculation Examination.

LATIN.

1. The course in Latin shall consist of suitable selections from the following prose writers and poets, to be prescribed from time to time by the Board of Studies concerned :—

Sallust, Cicero, Livy, Virgil, Horace.

The course shall also include Latin Grammar.

2. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the Prose selections .. 40 *marks.*
(*b*) Questions on the Poetry selections .. 40 *marks.*

In neither case shall mere translation of the set texts carry more than 20 marks.

(*c*) Questions on Grammar .. .. 20 *marks.*

Paper II.

(*a*) Translation of simple passages from English into Latin. 40 *marks.*

(*b*) Unseen passages in Latin for translation into English. 60 *marks.*

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Questions on the texts shall comprise—

(*a*) Passages from the set texts for translation into English.
(*b*) Questions on the subject-matter, and
(*c*) Questions on the language of the text.

The unseen passages shall not exceed in difficulty the selections set for the Matriculation Examination.

FRENCH.

1. The course in French shall consist of one work in prose and selections in verse from one or more writers, which shall be prescribed from time to time by the Board of Studies concerned. The course shall include French Grammar.

2. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the prescribed text prose and verse. 50 *marks.*

Not more than 25 marks shall be assigned to mere translation.

(*b*) Questions on Grammar .. .. 20 *marks.*
(*c*) Passages for translation from English into French. 30 *marks.*

Paper II.

(*a*) Unseen passages of French prose and verse for translation into English .. .. .. 70 *marks.*
(*b*) Passages for translation from English into French. 30 *marks.*

Questions on the text shall comprise—

(*a*) Passages from the set texts for translation into English.
(*b*) Questions on the subject-matter, and
(*c*) Questions on the language of the text.

GERMAN.

1. The course in German shall consist of one work in prose and selections in verse from one or more writers, which shall be prescribed from time to time by the Board of Studies concerned. The course shall include German Grammar.

2. The marks in the two papers shall be distributed in the same proportion as in the case of French.

HISTORY.

The subject shall be—

(*i*) The History of England from the earliest times to the end of the reign of Victoria.

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(*ii*) The History of Ancient Greece, from the earliest times to the Roman Conquest, 146 B.C.

(*iii*) The History of Rome from the earliest times to the extinction of the Western Empire, 476 A.D.

Paper I.—History of England.
Paper II.—History of Greece and of Rome.

LOGIC.

Definition, Scope, and Use of Logic. Its relation to Metaphysics and Psychology. Immediate and Mediate knowledge. Reasoning in general. Division of Logic into Formal and Material. Formal Logic. Principles of Formal Reasoning: Identity, Contradiction, Sufficient Reason. Axioms and Postulates. Language and Thought. Realism. Conceptualism and Nominalism, and their bearing on the nature of the logical processes.

Concept and Term. Abstraction. Use of Names. Denotation and Connotation, Extension and Intension. Distribution. Definition, with its limits and formal conditions. Logical Division and its conditions. Various Division of Terms, and their significance.

Judgment and the Proposition. Theory of Predication and Import of Propositions, Essence. Genus. Species. Differential Property. Accident. Quantity and Quality. Modality. Simplification of Propositions. Various Divisions of Propositions and their significance. Opposition of Propositions, and its practical applications.

Inference in general. Immediate and Mediate Inference, Deductive and Inductive Inference.

Immediate inference, and its different forms. Conversion, Obversion, Contraposition, Inversion, Opposition, with their practical applications.

Deductive Inference. Premises and Middle Terms. Syllogism: its structure and conditions The Canons. Figures and Moods, and their rules. Reduction. Hypothetical and Disjunctive Syllogisms with their rules. Dilemma. Compound Syllogisms and Trains of Reasoning Practical application of the Syllogism to express and test reasonings.

Fallacies in Deductive Reasoning

Material Logic. Nature of Truth. Knowledge and Reality. Sources of knowledge. Perception. Inference. Authority. Necessary Truth.

Generalization and the General Idea.

Science. Laws of Nature. Uniformity of Nature.

The grounds and conditions of Inductive Inference. Causality.

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Origin of belief in universal causation. Energy and conservation. Causes and Conditions. Plurality of Causes. Composition of Causes, and Intermixture of Effects.

Discovery and Proof. Hypotheses, their uses and conditions. Theory. Verification. Observation and Experiment and their uses. The Experimental methods and their uses, with examples of their application. Fallacies of Observation.

Nature, place and use of the Inductive Method. Perfect and Imperfect, Complete and Incomplete Induction. Inference from Analogy. Inference from Simple Enumeration. Inductive Probability; Chance and its Elimination. Scientific Induction. Processes simulating Induction. Fallacies in Inductive Reasoning.

Classification, Natural and Artificial, and its conditions. Relation of Classification to Division. Definition, and its material conditions. Description. Type. Errors in Classification and Definition. Terminology and Nomenclature.

Nature, place and use of the Deductive Method. Relation of Induction and Deduction; Nature, function and value of the Syllogism. Inductive and Deductive Sciences. The actual Method of Scientific Progress. Demonstration. The World as a system of law. Explanation, and its limits.

GENERAL.

1. In order to pass the Intermediate Examination in Arts, a candidate must obtain—

In English	108 *marks.*
In the Vernacular or the alternative paper ..	36 *marks.*
In each of the remaining subjects taken up ..	60 *marks.*
And in the aggregate	340 *marks.*

2. In order to be placed in the first division a candidate must obtain 500 marks.

In order to be placed in the second division, 400 marks.

The names of candidates placed in the first division shall be published in order of merit.

3. Any candidate who has failed in one subject only, and by not more than 5 per cent. of the full marks in that subject, and has shown merit by gaining 500 in the aggregate, shall be allowed to pass. In order to determine the division in which such a candidate will be placed and his place in the division, the number of marks by which he has failed in one subject shall be deducted from his aggregate.

4. If the Moderators are of opinion that, in the case of any candidate not covered by the preceding Regulations, consideration ought to be allowed by reason of his high proficiency in a

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particular subject, or in the aggregate, they shall report the case to the Syndicate, and the Syndicate may pass such candidate.

5. Candidates who, after passing the Intermediate Examination in Science, appear for the Intermediate in Arts, shall be required, in order to pass, to obtain 36 per cent. in each subject for which they present themselves in the latter examination.

CHAPTER XXXII.

BACHELOR OF ARTS.

1. An examination for the Degree of Bachelor of Arts shall be held annually in Calcutta, and at such other places as shall from time to time be appointed by the Syndicate, and shall commence at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any undergraduate of the University may be admitted to the Examination provided he has prosecuted a regular course of study for not less than two academical years after passing the Intermediate Examination in Arts in a College or Colleges affiliated to the University in the subjects which the candidate takes up.

3. Every candidate sent up for the B.A. Examination by an affiliated College shall produce a certificate (*a*) of good conduct, (*b*) of diligent study, (*c*) of having satisfactorily passed the College periodical examinations and other tests, and (*d*) of probability of passing the Examination. Every candidate shall send to the Registrar his application, with a certificate in the form prescribed by the Syndicate at least six weeks before the date fixed for the commencement of the Examination. If he desires to be examined for Honours in any subject, he shall name the subject in his application. If a candidate offers himself for Examination in Hebrew, Armenian, French, or German, he shall be required to give the Registrar notice of the fact twelve months before the date of the Examination.

4. A fee of Rs. 35 shall be forwarded by each candidate with his application.

A candidate who fails to pass, or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to one or more subsequent Examinations for the Degree of Bachelor of Arts on payment of a like fee of Rs. 35 on each occasion, provided he produces a certificate from the Head of an affiliated College shewing that he has prosecuted a regular course of study for one

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academical year since the date of the last Examination, in each of the subjects in which he is to be examined.

5. The Examination for the Degree of Bachelor of Arts shall be conducted by means of printed papers, the same papers being used at every place at which the Examination is held.

6. Every candidate shall be examined in the following subjects :—

(1) English.

(2) Composition in one of the following Vernaculars :—Bengali, Hindi, Uriya, Assamese, Burmese, Urdu, Modern Armenian.

For candidates whose vernacular is English or an Indian vernacular not included in this list, there shall be an advanced paper in English which shall be treated as separate from the Examination in English.

(3) and (4) Two of the following subjects, one of which at least must belong to Group A :—

A.

(I) One of the following languages :—Sanskrit, Pali (including a knowledge of Sanskrit up to the Matriculation Standard), Arabic, Persian (including a knowledge of Arabic up to the Intermediate Standard), Hebrew, Classical Armenian, Greek, Latin, French, German.
(II) History.
(III) Political Economy and Political Philosophy.
(IV) Mental and Moral Philosophy.
(V) Mathematics.

B.

(I) Physics.
(II) Chemistry.
(III) Physiology.
(IV) Botany.
(V) Zoology.

No candidate shall be allowed to take up Mental and Moral Philosophy unless he has taken up Logic in the Intermediate Examination in Arts. No candidate shall be allowed to take up any subject in Group B, or Mathematics, who has not taken up the corresponding subject in the Intermediate Examination.

7. A candidate may take the Pass Course in four subjects or he may take the Pass Course in three subjects and the Honours Course in one subject only; but there shall be no Honours Course in the Vernacular.

8. There shall be three papers in the Pass Course and six papers in the Honours Course, in every subject except the Vernacular. In that subject only one Pass paper shall be set. Each paper shall be of three hours and shall carry 100 marks.

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9. In the Syllabuses hereinafter defined Papers 1, II and III shall be on the Pass Course, but questions set for Honours Candidates need not be identical with those set for Pass Candidates. Papers IV, V and VI shall be for Honours Candidates only.

10. As soon as possible after the Examination, the Syndicate shall publish a list of the candidates who have passed in the Pass Course, arranged in alphabetical order, together with a list of those who have obtained Honours in each branch, arranged in two classes, both in order of merit. Each successful candidate shall receive with his Degree of B.A. a certificate in the form entered in Appendix A.

11. The syllabuses in Mathematics and in the subjects under Group B shall be identical in the B.A. and B.Sc. Examinations and will be found under the B.Sc. Regulations.

There shall be a practical Examination in all subjects included in Group B.

12. The following syllabuses define the subjects prescribed for the B.A. Examination. Books shall be recommended where necessary by the Board of Studies concerned.

ENGLISH.

1. In Papers I, II, IV and V not more than half the marks shall be given for explanation of passages set from the prescribed texts.

2. In these papers, questions may be asked to test the candidate's appreciation of the books he has studied in the course, but questions encouraging the mere reproduction of literary criticisms shall not be set.

3. The subjects and marks shall be respectively divided as follows :—

Paper I.

Poetry and Drama texts .. .. 100 *marks.*

Paper II.

Prose texts .. . .. 100 *marks.*

In regard to the subject of these two papers students shall be expected to possess a general knowledge of the life and literary career of the authors whose works are prescribed.

Paper III.

(*a*) Essay .. .. 50 *marks.*

(*b*) Unseen passages from authors or works of the same standard of difficulty as those prescribed for the Intermediate Examination .. .. 50 *marks.*

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4. Additional Honours papers.

Paper IV.

(*a*) Additional Poetry and Drama texts .. 75 *marks.*
(*b*) Additional unseen passages in Poetry and Drama. 25 *marks.*

Paper V.

(*a*) Additional Prose texts .. .. 75 *marks.*
(*b*) Additional unseen passages in Prose .. 25 *marks.*

In Papers IV and V the unseen passages shall not be of a higher standard of difficulty than the prescribed texts.

Paper VI.

(*a*) Philology of the English language .. 50 *marks.*
(*b*) General History of English Literature .. 50 *marks.*

5. No texts or unseen passages shall be taken from Spenser or from authors earlier than the Elizabethan period.

VERNACULARS.

1. The course for the B.A. Examination in each of the Vernaculars shall consist of a small number of standard works (not exceeding three) to be read as presenting ideals of character and models of style. The names of the works in each language shall be notified from time to time by the Syndicate on the recommendation of the Board of Studies in that language.

2. The paper shall be a test of composition and of a general knowledge of the subject-matter of the books recommended.

Questions shall not be set on the history of the Vernacular and its literature.

Alternative Paper in English.

The special paper shall be a test in English Composition and on a general knowledge of the subject-matter of a small number of standard works in English (not exceeding three) to be prescribed by the Syndicate from time to time on the recommendation of the Board of Studies in English.

SANSKRIT.

The Pass Course in Sanskrit shall comprise the following :—

Paper I.

(*a*) Poetry texts, namely, selected portions of Manu and selected portions of one of the following :—
Kiratarjuniya—Sisupalabadha .. 75 *marks.*
(*b*) Translation from English into Sanskrit .. 25 *marks.*

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Paper II.

(*a*) Drama texts, namely, two of the following :—

Sakuntala.
Uttararamacharita.
Mudrarakshasha.
Ratnavali .. .. 75 *marks.*

(*b*) Translation from English into Sanskrit .. 25 *marks.*

Paper III.

(*a*) Prose passages from unprepared Sanskrit books for translation into English .. .. 30 *marks.*
(*b*) Questions on Sanskrit Grammar, including passages for correction .. .. .. 40 *marks.*
(*c*) Outlines of the History of Sanskrit Literature 30 *marks.*

The Honours Course in Sanskrit shall comprise, in addition to the Pass Course, the following :—

Paper IV.

(*a*) Selected portions of Bhattikavya and Kadambari. 75 *marks.*
(*b*) Translation from English into Sanskrit .. 25 *marks.*

Paper V.

Selected Hymns from the Rigveda, with Sayana's Commentary thereon .. .. .. 100 *marks.*

Paper VI.

Grammar and Rhetoric, namely—

(*a*) Siddhanta Kaumudi—Karaka and Samasa 60 *marks.*
(*b*) Dandi—Kavyadarsa. Sahitya darpan, Chapter VI. 40 *marks.*

In the first, second, fourth, and fifth papers, the questions on the text shall include—

(i) Passages from the prescribed texts for translation into English (to carry not more than 25 marks in any paper).
(ii) Questions on the subject-matter and on the language of the prescribed texts.
(iii) Questions on Grammar and Prosody (but not Rhetoric) arising out of the prescribed texts.
(iv) Passages for translation or discussion in English, taken from standard Sanskrit commentaries on the prescribed texts, to be named by the Syndicate from time to time.

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In the third paper, the unseen passages shall not exceed in difficulty the prose texts set for the Intermediate Examination in Arts.

The Syndicate shall from time to time cause to be prepared and prescribed a text-book in Sanskrit Grammar.

In the sixth paper, questions will be set to test the ability of candidates to apply, (*a*) the rules of Panini on Karaka and Samasa, and (*b*) the rules of Rhetoric to passages taken from the prescribed texts.

The Syndicate shall, upon the recommendation of the Board of Studies, select the texts in accordance with the syllabus and may also recommend books or specify editions to indicate more fully the extent and standard of knowledge required in any paper.

ARABIC.

1. The Pass Course in Arabic shall comprise the whole or selected portions of the following works :—

Poetry.—The Hamása.
The Díván of Mutanabbí.
The Díván of Abú' Atáhíya.

Prose.—The Qor'án.
The Maqámát Harírí.
Tabarí's History.
Qazwíní's Geography.

The Course shall include Arabic Grammar, according to the modern method.

2. The Honours Course shall include in addition to the above. the whole or selected portions of the following works :—

Poetry.—The Seven Mu'allaqát.
Bánat Su'ád.
The Díván of Ibn Fáridh.

Prose.

The Qor'án, with the Commentaries of Baydháwí, and of Zamakhsharí.
Ibn Hishám's Life of the Prophet.
The Muqaddima of Ibn Khaldún.
The Mukhtasar-ul-Ma'ání.

The Honours Course shall also include the elements of Arabic Prosody and Rhetoric ; the outlines of Muhammadan History down to the fall of the Abbasid Caliphate ; and a general knowledge of the History of Arabic Literature.

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3. The subjects and the marks shall be distributed as follows :—

Paper I.

Questions on the Poetry texts .. .. 100 *marks.*

Paper II.

Questions on the Prose texts .. .. 100 *marks.*

Paper III.

(*a*) Unseen passages for translation into English. 70 *marks.*
(*b*) Short English sentences for translation into Arabic. 30 *marks.*

The unseen passages in this paper shall be of no greater difficulty than the texts prescribed for the Intermediate Examination.

Paper IV.

(*a*) Questions on the additional Poetry texts .. 80 *marks.*
(*b*) Translation from English into Arabic .. 20 *marks.*

Paper V.

(*a*) Questions on the additional Prose texts .. 80 *marks.*
(*b*) Translation from English into Arabic .. 20 *marks.*

Paper VI.

(*a*) Questions on Muhammadan History .. 30 *marks.*
(*b*) Questions on the History of Arabic Literature 40 *marks.*
(*c*) Questions on Rhetoric and Prosody .. 30 *marks.*

In Papers I, II, IV and V, questions on the texts shall comprise :—

(*a*) passages of the set texts for translation into English
(*b*) questions on the subject-matter ; and
(*c*) questions on the Grammar of the set passages.

In no paper shall more than one-fourth of the marks of these questions be assigned to mere translation of the set passages.

PERSIAN.

1. The Pass Course in Persian shall comprise the whole or selected portions of the following works :—

Poetry.

The Sháh Náma of Firdausí.
The Díván of Háfiz.
The Masnavi of Jalál-ud-Dín-Rúmí.
The Kulliyát of Qá'áni.

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Prose.

The Akbar-Náma.
The Wakáya' of Ni'mat Khán 'Ali.
The Siyásat Náma of Nizám-ul-Mulk.
The Arúz of Saifi.

Arabic Prose.

The Qor'án.
The Alif Layla.

The Pass Course shall include the elements of Persian Prosody and Rhetoric and a knowledge of Arabic Grammar up to the Intermediate Standard.

2. The Honours Course shall include, in addition to the above, the whole or selected portions of the following works :—

Poetry.

Gulshan-i-Ráz.
The Qasá'id of Kháqání.

Prose.

Chahár Maqála of Nizám-i-Arúzí.
The Táríkh-i-Wassáf.
The Inshá of Abul Fazl.
Akhláq-i-Jalálí.

Arabic Prose.

The Qor'án.
Ikhwán-us-safá.

The Honours Course shall also include the outlines of Muhammadan History in so far as it relates to Persia, Central Asia and India, and the History of Persian Literature.

3. The subjects and the marks shall be distributed as follows :—

Paper I.

Questions on the Persian Poetry texts .. 100 *marks.*

Paper II.

(*a*) Questions on the Persian Prose texts .. 50 *marks.*
(*b*) Questions on the Arabic Prose texts .. 50 *marks.*

Paper III.

(*a*) Unseen passages for translation from Persian into English .. .. .. 50 *marks.*
(*b*) Simple English passages for translation into Persian. 50 *marks.*

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The unseen passages in this paper shall be of no greater difficulty than the texts prescribed for the Intermediate Examination.

Paper IV.

(*a*) Questions on the additional Persian Poetry texts. 80 *marks.*
(*b*) Translation from English into Persian .. 20 *marks.*

Paper V.

(*a*) Questions on the additional Persian Prose texts. 40 *marks.*
(*b*) Questions on the additional Arabic Prose texts. 30 *marks.*
(*c*) Translation of simple English sentences into Arabic. 30 *marks.*

Paper VI.

(*a*) Questions on Muhammadan History .. 30 *marks.*
(*b*) Questions on the History of Persian Literature. 40 *marks.*
(*c*) Questions on Rhetoric and Prosody .. 30 *marks.*

In Papers I, II, IV and V, questions on the texts shall comprise—

(*a*) passages of the set texts for translation into English,
(*b*) questions on the subject-matter, and
(*c*) questions on the Grammar of the set passages.

In no paper shall more than one-fourth of the marks of these questions be assigned to the mere translation of set passages.

PALI.

1. The Pass Course in Pali shall comprise the following works :—

Poetry.

Dhammapada.
Khuddaka Patha.

Prose.—Milindapañha.

The course shall include a knowledge of Sanskrit Grammar up to the Matriculation standard, besides a knowledge of Pali Grammar and the elements of Comparative Philology.

2. The Honours Course shall comprise in addition to the above :—Mahavansa and Díghanikáya.

The Honours Course shall include a knowledge of Sanskrit Grammar up to the Intermediate Standard, and of the History of Buddhism with special reference to India.

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3. The subjects and the marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the Poetry texts .. .. 70 *marks.*
(*b*) Unseen passages of Pali poetry for translation into English .. .. 30 *marks.*

Paper II.

(*a*) Questions on the Prose texts .. .. 70 *marks.*
(*b*) Unseen passages of Pali prose for translation into English. 30 *marks.*

Paper III.

(*a*) Questions on Sanskrit Grammar .. 15 *marks.*
(*b*) Questions on Pali Grammar .. .. 15 *marks.*
(*c*) Questions on Comparative Philology .. 40 *marks.*
(*d*) Simple English passages for translation into Pali. 30 *marks.*

Paper IV.

(*a*) Questions on the additional Poetry texts .. 40 *marks.*
(*b*) Unseen passages of Pali Poetry for translation into English .. .. 30 *marks.*
(*c*) Questions on Sanskrit Grammar .. 30 *marks.*

Paper V.

(*a*) Questions on the additional Prose texts .. 40 *marks.*
(*b*) Unseen passages of Pali prose for translation into English. 30 *marks.*
(*c*) Questions on Sanskrit Grammar .. 30 *marks.*

Paper VI.

(*a*) Questions on the History of Buddhism .. 50 *marks.*
(*b*) Questions on Comparative Philology .. 50 *marks.*

In Papers I, II, IV and V, questions on the text shall comprise—

(*a*) passages of the set texts for translation into English,
(*b*) questions on the subject-matter, and
(*c*) questions on the Grammar of the set passages.

In no paper shall more than one-fourth of the marks of these questions be assigned to the mere translation of set passages.

HEBREW.

1. The Pass Course in Hebrew shall comprise specified portions of the Historical books, the Psalms and Proverbs. The Course shall include Jewish History.

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2. The Honours Course shall include in addition to the above, two prophetical books, and the History of the Hebrew Language and Literature.

3. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the specified Historical texts .. 70 *marks*.
(*b*) Unseen passages from Historical books for translation into English .. .. .. 30 *marks*.

Paper II.

(*a*) Questions on the Psalms and Proverbs .. 70 *marks*.
(*b*) Unseen passages from poetical books for translation into English .. .. .. 30 *marks*.

Paper III.

(*a*) English passages for translation into Hebrew. 50 *marks*.
(*b*) Questions on the History of the Jews, and on the literary history of the Bible .. .. 50 *marks*.

Paper IV.

(*a*) Questions on the specified Prophetical books. 70 *marks*.
(*b*) English passages for translation into Hebrew. 30 *marks*.

Paper V.

(*a*) Unseen passages from the Historical books for translation into English .. .. .. 40 *marks*.
(*b*) Unseen passages from the prophetical books for translation into English .. .. 30 *marks*.
(*c*) English passages for translation into Hebrew 30 *marks*.

Paper VI.

(*a*) Questions on the Hebrew language and Literature. 50 *marks*.
(*b*) Questions on Jewish History .. .. 50 *marks*.

In Papers I, II, and IV questions on the texts shall comprise—

(*a*) passages of the set texts for translation into English,
(*b*) questions on the subject-matter, and
(*c*) questions on the Grammar of the set passages.

In no paper shall more than one-fourth of the marks of these questions be assigned to the mere translation of set passages.

ARMENIAN.

1. The Pass Course in Armenian shall consist of the following texts :—

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Poetry.

Bagratoonie's translation of "Paradise Lost," Books IX, X, XI, and XII.

Prose.

Agathangalo's History, Parts I and III. Moses of Khoren's History.

The course shall include the History of Armenia.

2. The Honours Course shall include in addition to the above.

Poetry.

Bagratoonie's Haik Dientsazn, Books I, II, III, IV, and V.

Prose.

John Catholicus.
Elishe.

The Course shall include the History of Armenian Literature and the elements of Armenian Philology.

3. The marks shall be distributed as follows :—

Paper I.

(*a*) Questions on the Poetry text .. 70 *marks.*
(*b*) Unseen passages of Armenian Poetry for translation into English .. .. .. 30 *marks.*

Paper II.

(*a*) Questions on the Prose texts .. .. 70 *marks.*
(*b*) Unseen passages of Armenian Prose for translation into English .. .. .. 30 *marks.*

Paper III.

(*a*) English passages for translation into Classical Armenian. 50 *marks.*
(*b*) Questions on Armenian Grammar .. 20 *marks.*
(*c*) Questions on the History of Armenia .. 30 *marks.*

Paper IV.

(*a*) Questions on the additional Poetry texts .. 70 *marks.*
(*b*) English passages for translation into Armenian. 30 *marks.*

Paper V.

(*a*) Questions on the additional prose texts .. 70 *marks.*
(*b*) English passages for translation into Armenian. 30 *marks.*

Paper VI.

(*a*) Unseen passages in Armenian for translation into English .. .. .. 40 *marks.*

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(*b*) Questions on the History of Armenian Literature. 30 *marks.*

(*c*) Questions on Armenian Philology .. 30 *marks.*

In Papers I, II, IV, and V questions on the texts shall comprise—

(*a*) passages of the set texts for translation into English,
(*b*) questions on the subject-matter, and
(*c*) questions on the Grammar of the set passages.

In no paper shall more than one-fourth of the marks of these questions be assigned to the mere translation of set passages.

GREEK.

1. The Pass Course in Greek shall consist of suitable selections from the following authors to be prescribed from time to time by the Board of Studies concerned :—

Plato, Herodotus, Homer, Euripides, Aristophanes, Sophocles, Demosthenes.

The course shall include Greek Syntax and Grammar, and Greek History as prescribed for the Intermediate in Arts.

2. The Honours Course shall include in addition to the Pass Course selections from the following authors, to be prescribed from time to time by the Board of Studies concerned :—

Thucydides, Æschylus,

and may also include further selections from the authors mentioned in Regulation 1.

The Course shall include the Philology of the Greek Language as well as the History of Classical Greek Literature.

3. The subjects and marks shall be distributed in the same way as in the case of Armenian.

LATIN.

1. The Pass Course in Latin shall consist of suitable selections from the following authors to be prescribed from time to time by the Board of Studies concerned :—

Cicero, Livy, Lucan, Virgil, Horace.

The Course shall include Latin Syntax and Grammar and Roman History as prescribed for the Intermediate in Arts.

2. The Honours Course shall include in addition to the Pass

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Course selections from the following authors to be prescribed from time to time by the Board of Studies :—

Pliny, Tacitus, Terence, Lucretius, Catullus,

and may also include further selections from the authors mentioned in Regulation 1.

The Course shall include the Philology of the Latin language as well as the History of Latin Literature to the end of the Augustan Period.

3. The subjects and marks shall be distributed in the different papers in the same way as in the case of Armenian.

FRENCH AND GERMAN.

1. The course in French or German for the Pass as well as for the Honours shall consist of such works in prose and verse as may be prescribed from time to time by the Board of Studies concerned.

2. The Pass Course shall include in addition to the prescribed texts Grammar and the Outlines of French or German History.

3. The Honours Course shall include in addition to the subjects mentioned in Regulations 1 and 2 above, the elements of French or German Philology and the history of a selected period of French or German Literature.

4. The subjects and marks shall be distributed in the same way as in the case of Armenian.

HISTORY.

1. The Pass Course in History shall be as follows :—

Paper I.—History of Europe from the fall of Constantinople to the Treaty of Berlin.

Paper II.—History of England—a special period.

Paper III.—History of India from the earliest times to the close of the 19th century : and the elements of Ancient Hindu and of Muhammadan civilization in India.

2. The Honours Course shall comprise in addition to the above.—

Paper IV.—A special period of Greek History.

Paper V.—A special period of Roman History.

Paper VI.—The History of the Middle Ages in Europe from the rise of the Mediæval European powers down to the end of the 15th century.

In each of the special Honours papers at least one question shall be set, to be answered in the form of an essay which shall carry not less than 25 marks.

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Candidates shall be expected to possess a knowledge of the geography of the countries whose history they study, and to understand the use of physical and historical maps.

Books on History shall be recommended from time to time by the Board of Studies concerned who shall also select the special periods.

POLITICAL ECONOMY AND POLITICAL PHILOSOPHY.

1. The Pass Course in Political Economy and Political Philosophy shall be as follows :—

Paper I.—Political Economy.
Paper II.—Political Philosophy.
Paper III.—Application of the principles of Political Economy to Indian topics.

2. The Honours Course, in addition to the above, shall be as follows :—

Paper IV.—Political Economy (a higher course).
Paper V.—Political Philosophy (a higher course) including a specially selected text or texts.
Paper VI.—Essay.

3. The following are the Syllabuses for the different subjects :—

Political Economy.

Definition. Scope. Relation to Sociology, Politics, Statistics. Methods. Standpoints and Schools. Postulates. Wealth. Utility. Income.

A knowledge in outline of the fundamental propositions under each head of division named below. A fuller knowledge of the special points mentioned below under these heads.

(*a*) *Production.*—Production on a large and on a small scale. Land. Labour. Capital. Laws of Return. Population. Organisation of Labour. Control of Business.

(*b*) *Consumption.*—Demand and supply. Balance between the two.

(*c*) *Distribution.*—Rent. Wages. Profits. Systems of Rent and Land Tenure. Custom.

(*d*) *Exchange.*—Value. Price. Money. Bimetallism. Banks. Foreign Exchange. Credit. Trade, home and foreign. International Values.

(*e*) *Descriptive Economics.*—Companies and Partnership, Organization of Industries, Trades Unions, Co-operation in the spheres of Production and Distribution. Co-operative Credit Societies. Banking systems. Money Market. Stock Exchange.

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(*f*) *Economic functions of Government.*—Economic Freedom. Government regulation of, and Government participation in. the work of production, distribution and exchange. Taxation. Public Revenue and Expenditure. National Debt. Private Property. Socialism. Poor Laws. Free Trade. Protection. Reciprocity.

Economic Progress in the work of production, distribution, and exchange.

Political Philosophy.

Definition. Scope. Methods

The State. Leading Theories of its origin and nature. Law. Government.

The People of the State. The Nation. Nationality as a constituent element of the State. Political Society. Its Divisions. Privileged Classes. Citizenship. Classes without political rights.

Rights and Duties. History of Natural Law. Practical consequences of a belief in Natural Law.

The Territory of the State. Its Political Divisions.

The Constitution of the State. Different forms of Constitutions. Monarchy, Oligarchy, Aristocracy, Democracy, City States. The outlines of the present constitutions of (*a*) France, (*b*) Germany, and (*c*) the United States. The present British constitution.

The Structure of the State. The Legislature. The Executive. The Judiciary. Power of Taxation. Control of the Public Purse. Tests of Popular Liberty.

Growth of the State. Revolutions. Evolution. Functions of Legislation. The Individual and the State.

The End and Functions of the State. Sovereignty and Subjection. The nature and organisation of the Public Services.

Application of the Principles of Political Economy to Indian Topics.

The Geographical Factor.

Physical features and conditions of the country and their bearings on Indian economic products. Facilities of Transport.

The Special Factor.

The Village system and Rural ecomomy. Peasant proprietorship. Caste and its economic significance. Its influence on the organization of Indian Industries. The Joint Family, and Hindu and Mahomedan Laws of Inheritance in regard to their economic bearings and consequences. Status and custom, and their

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influence on rents, wages and prices. Organisation of agriculture, handicraft and domestic industries in rural India. Caste Guilds. City Industries. Mahommedan Guilds and Industries. Indigenous organization of Trade and Transport; of Banking and Agricultural credit.

The Political Factor.

Pax Britannica and its economic effects. Chief British Indian systems of Land tenure with their economic consequences. Foreign capital and organization of labour, machinery, transport and credit, and the economic development of the country. Political relations of India to England, and their effect on the Balance of Trade.

The postulates of pure Economy, how modified in their application to Indian Consumption, Production, Distribution and Exchange.

Consumption.—The Indian standard of comfort as determining Indian consumption: the laws of consumption: statistics of Indian consumption; comparison with the United Kingdom.

Production.

(*a*) The economics of a mainly agricultural country as opposed to those of a mainly manufacturing country.

(*b*) Special conditions of land, labour and capital as affecting Indian production.

(*c*) Comparative efficiency of labour and cost of production in the chief industries in India and other countries. National wealth of India. Average production per head. Average income, gross and net.

(*d*) The development of manufacturing industries in India. Foreign capital and skill. Technical Education and its relation to castes and guilds.

Distribution.—Rent in India, as affected by (1) State Landlordism, (2) Permanent Zemindary settlements, (3) Pressure of population on the soil, (4) Land tenure legislation and rent laws, (5) Custom.

Wages in different employments. Average rates. Purchasing power of wages.

Profits.—Profits of Manufacture. The Profits of the middleman as agricultural money-lender, and as commercial agent.

Exchange.—The Indian Balance of Trade. India's debt and the Home Charges. Currency Legislation and Foreign Exchange. The Gold Standard and its influence on prices. The Gold Reserve. The Gold and Silver Currency. Purchasing power of money. Commercial Legislation.

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Public Finance.—Direct and indirect taxation. Chief heads of Revenue. Nature of land revenue in India. Incidence of taxation in India. Chief heads of Expenditure.

MENTAL AND MORAL PHILOSOPHY.

I. Psychology—Pass and Honour.

Scope.—Psychology as a natural science. Laws of Mind. Relation of Psychology to Physiology. Relation of Psychology to Logic, Æsthetics, Ethics and Metaphysics.

Methods.—Subjective and Objective. Physiological and Comparative Psychology. Experimental Psychology.

Consciousness, the Sub-conscious, the Unconscious, Relativity of Consciousness. Analysis and classification of Mental states and processes. Correlations of the Cognitive, the Emotional and the Conative elements. Unity of conscious life.

The physical basis of Mental life.—Nerves: structure and function. Brain; structure and function. Muscle, structure and function. Physiological processes corresponding to elementary psychical states.

Mental development.—Fundamental Laws and Processes. Attention, Discrimination, Assimilation, Association and Apperception.

Sensation and its organic basis.—Stimulus and Sensation. Relativity in the sphere of sensation. Weber's Law. Fechner's Law. Sensations of Organic Life. Organs and Sensations of Taste, Smell, Touch, Hearing and Sight. Muscle. Consciousness and its physiological basis. Sensation and movement. Qualities of Sensation.

Perception.—Perception, and its object. Perception of Externality. Localisation. Perception of space. Free movement. Tactile space. Visual space. Perception direct and indirect, of Impenetrability, Movement, Extension, Figure, Magnitude, Weight, Solidity, Distance and Direction.

Ideation.—Percept and Image. Retention, Representation and Recognition, Association and Suggestion, Construction, Expectation: their forms, conditions and applications. Hallucinations and Illusions. Reverie and Dream.

Consciousness of duration.—The time series, and spatial order. Apprehension of things in spatial and temporal order.

Elaboration.—Nature of thought. Judgment and its categories. Abstraction, conception and classification, reasoning, language and thought and their correlated growth. Elaboration of the external world in idea. Conception of Law. Idea of interdependence.

Belief, its nature and grounds.

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Feelings.—Feeling and organism. Expression. Pleasure, pain. Law of Self-conservation. Development of Feeling.

Classification of feelings.—The sense-feelings. Vital feelings.

Relativity in the sphere of feelings.—Relative feelings, surprise.

Emotions: Joy and sorrow, hope and fear; anger, love and hate. Egoistic emotions: Social Emotions, Sympathy. Intellectual emotions. Æsthetic emotions,—the beautiful, the sublime, the ridiculous, The Moral sentiment. The Religious sentiment.

Conation.—Primitive elements. Spontaneous and Reflex action. Emotional expression and gesture. Ideo-motor action, Imitation and Play, Instinct, Heredity, Habit and their relation to the organism. Attention.

Voluntary action.—Its nature, origin and development. Impulse, Appetite, End, Desire and Motive. Conflict of Desires, Deliberation. Volition—Purpose and Intention, Self-control, and formation of character.

Consciousness of volition.—Consciousness of freedom. The individual self in relation to the physical and the social environment.

II. GENERAL PHILOSOPHY.—PASS AND HONOUR.

Philosophy.—Definition and province. Relation of Philosophy to Epistemology, and Ontology. Relation of Philosophy to Science.

Methods.—Dogmatism, Scepticism, Criticism, and Dialectic.

Knowledge.—Philosophical knowledge as the analysis, criticism, and rationalisation of experience. Idealism, Realism and Ideal-Realism.

Origin of Knowledge.—A priori and *a posteriori* theories. Dogmatism and Criticism, Evolution and Dialectics.

Categories of Knowledge.—Space, Time, Substance, Causality: the contents and origin of these ideas.

Dialectics as applied to Knowledge.—Subject, object and the absolute. Phenomenon and noumenon. The Finite and the Infinite. The Conditioned and the Unconditioned. The Relative and the Absolute.

The ideas of the World, the Soul, and God.

The World.—Reality. The World as a system of reals. Temporal and Spatial order, Matter and Motion, Energy, Conservation and Correlation. The Causal series. Substance and Attribute. The Individual and the Universal. Realism and Nominalism. Mechanism and Life. Organisation. The species idea. Evolution in Nature. Mechanical and Teleological Evolution.

The Soul.—Consciousness and life. The physiological and the psychical series. Parallelism, and other theories of their relation. Mental evolution in the animal kingdom. Mental evolution in

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the race. Nature and origin of reason. The soul and the self. The empirical self, the individual self and the social self. Society and the individual. Custom and social morality. Organisation of Rights. The Ethos. Ethicality. Personality and personal rights. The Moral Law. The Moral Reason. The Noumenal self as distinguished from the empirical self.

God.—Contents of the idea. God as conditioning the world and the soul. God as the Absolute. The idea of the Absolute, and its implications. Relation of God to the world-series, and the soul-series. Types of Monism, Dualism and Pluralism. Transcendence and Immanence . Ultimate causality and end. Relation of God to man. Moral Government and Providence. Liberty and Necessity. Future Life and Eternity. The Cosmos considered *sub specie æternitatis*. The Universal Reason.

III. Ethics.—Pass and Honour.

Definition, province and end of Ethics.

Relation of Ethics to Psychology, Sociology, Politics, Metaphysics and Theology.

Methods of Ethics : Leading Opinions on. Character of Ethical Science.

Actions : Moral and non-moral : Analysis of. Desire, Intention, Motive, End, Volition. Natural and Moral evil. Sin and Error.

Elements of the Moral Consciousness : Intellectual, Emotional, Volitional. Good and Evil. Right and Wrong. The Highest Good. Moral Sentiment.

Nature, Method, and Object of the Moral Judgment. Springs of action.

Postulates of Moral Judgment : Reason ; Personality ; Self-determination.

Conscience and Prudence. The Moral Faculty.

Moral Obligation : Nature, Grounds and Source of. The seat of Authority in Morals. Moral Law. Sense of Duty. Merit and Guilt. Sanctions. Theory of Reward and Punishment.

The leading Ethical Standards and a critical estimate of them. Law—Divine, Political. Pleasure and Happiness. Egoism. Altruism. The Æsthetic Sense. Immutable Law and Eternal Fitness. Perfection and Self-realisation. Evolution, individual and social.

Relation of the Individual and Society. The Social Organism. Moral Institutions.

Duties and Virtues : Nature of ; and Principles of their classification. Conflict of Duties.

Growth of the character. Moral progress in the Race. The Moral Ideal.

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HONOURS.

The additional Honour subjects shall include—

(*a*) Natural Theology.
(*b*) History of Philosophy.
(*c*) Special Texts to be selected from year to year, and Essay.

Natural Theology.

Religion.—Nature of. Relation to Science, Art, Philosophy, Morality.

Religion, Natural and Revealed.

Theology.—Relation to (*a*) Science of Religion and Comparative Religion, (*b*) Ethics, (*c*) Philosophy.

The Religious Consciousness.—Its originality, its contents. (*a*) The cognitive element—the idea of God as First Cause, as Ultimate ground, as the Infinite and the Absolute, as the Self. (*b*) The emotional element,—the religious sentiment,—awe, reverence, worship. (*c*) The volitional element, the sense of duty.

Grounds of Belief in God.—(*a*) The idea of the Perfect Being, of the Infinite, of the Absolute, of necessary Being, and the contingency of the Cosmos, (*b*) the nature of Causality, and the Cosmological argument, (*c*) final cause, (*d*) conscience and Moral Law. Other grounds: consensus, intuition, criticism of experience and dialectic.

Evidence of final cause.—Adaptation, external and internal. Explanations:—mechanism, design, immanent finality. Arguments against these; and substitutes offered. Criticism of the substitutes. Reconciliation of Mechanism and Teleologism in Immanent Finality. Resulting conception of evolution.

The Nature and Attributes of the Divine Being, with special reference to Divine Personality.

The World, its creation, and conservation. Providence and Divine Government, natural and moral.

The problem of Pain and Moral Evil.

Types of Religion, philosophically considered.

Theistic theories.

Quasi-theistic theories.—Deism, Pantheism.

Anti-theistic theories.—Materialism, Naturalism, Phenomenalism, Agnosticism, Positivism, Pessimism; their import, origin and grounds.

History of Philosophy.

A general knowledge of the systems of Bacon, Descartes, Spinoza, Locke, Berkeley, Hume, Reid and Kant.

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Selected Texts.

Specially Selected Texts and Essay on Subjects drawn from Pass or Honour Syllabuses or Texts.

The arrangement of papers for Pass and Honours shall be as follows :—

Pass.

First Paper ..	.. Psychology.
Second ,, ..	.. Ethics.
Third ,, ..	.. General Philosophy.

Honours.

First Paper ..	.. Psychology.
Second ,, ..	.. Ethics.
Third ,, ..	.. General Philosophy.
Fourth ,, ..	.. Natural Theology.
Fifth ,, ..	.. History of Philosophy.
Sixth ,, ..	.. Essay and Selected Texts.

GENERAL.

1. A candidate must obtain in order to pass in the Pass Course—In English .. .. .. 100 *marks.*
Vernacular or paper alternative to it .. 33 *marks.*
any subject in Group A .. .. 100 *marks.*
any subject in Group B in the Theoretical papers 60 *marks.*
and
in the Practical papers .. .. .. 40 *marks.*

2. A candidate must obtain in order to pass in the Honours Course—
In English .. .. 180 *marks.*
any subject in Group A .. .. .. 180 *marks.*
any subject in Group B in the Theoretical papers 180 *marks.*
and
in the Practical papers .. .. .. 72 marks.

3. A candidate must obtain, in order to qualify for Honours—In English .. .. .. 240 *marks.*
any subject in Group A .. .. 240 *marks.*
any subject in Group B in the Theoretical papers 160 *marks.*
and
in the Practical papers .. .. .. 80 *marks.*

4. If a candidate takes up the Pass Course in four subjects he must, in order to pass the B.A. Examination, pass in each subject, and obtain 360 marks in the aggregate. If he passes and obtains 500 marks in the aggregate, he shall be declared to have passed with distinction.

5. If a candidate takes up the Pass Course in three subjects,

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and the Honours Course in one subject, he must, in order to pass the B.A. Examination, pass in each subject, and obtain 468 marks in the aggregate. If he passes and also qualifies for Honours in his Honours subject, he shall be declared to have obtained Second Class Honours in that subject. If he passes, qualifies for Honours in his Honours subject, and obtains 360 marks in that subject, he shall be declared to have obtained First Class Honours in such subject.

6. Any candidate who has failed in one subject only, and by not more than 5 per cent. of the full marks in that subject, and has shown merit by gaining 50 per cent. or more in the aggregate of the marks of the Examination, shall be allowed to pass. If any such candidate has taken up the Pass Course in three subjects, he shall not be delcared to have passed with distinction. But if the candidate has taken up the Pass Course in three subjects and the Honours Course in one subject, and has qualified for Honours in such subject, he shall be allowed to retain his Honours and his place in the Honours list.

7. If the Examiners are of opinion that in the case of any candidate not covered by the preceding Regulation, consideration ought to be allowed by reason of his high proficiency in a particular subject or in the aggregate, they shall report the case to the Syndicate and the Syndicate may pass such candidate, or give him Honours, as the case may be.

CHAPTER XXXIII.

MASTER OF ARTS.

1. An examination for the degree of Master of Arts shall be held annually in Calcutta, at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

Any candidate who has passed the B.A. Examination not less than two academical years previously may be examined for the degree of M.A. in any subject mentioned in paragraph 5, provided he has prosecuted a regular course of study in that subject for two academical years in a College or Colleges affiliated to the University in respect of that subject and standard or under one or more University Professors or Lecturers in that subject.

Any candidate who has passed the B.A. Examination not less than three academical years previously may be admitted as a private student to the M.A. Examination in any of the subjects included in I—XIII, subject to the provisions of Section 19 of the Indian Universities Act.

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In the case of any of the subjects included in I—XIII in which there is for the time being no provision for a regular course of study under one or more University Professors or Lecturers, a candidate who has passed the B.A. Examination not less than two academical years previously may be admitted to the M.A. Examination in that subject as a private student, subject to the provisions of Section 19 of the Indian Universities Act.

2. Every candidate shall send in his application with a certificate in the form prescribed by the Syndicate, and a fee of Rs. 50 to the Registrar not less than three months before the Examination. If a student desires to appear in the M.A. Examination in subjects III, VI, IX, or XX he shall give the Registrar one year's notice of the fact.

3. Any Master of Arts may, on payment of a fee of Rs. 50, be admitted to the M.A. Examination in any branch other than that in which he was previously examined, provided that if he takes any of the subjects XIV to XX, he has prosecuted a regular course of study in that subject for two academical years in a College or Colleges affiliated to the University in respect of that subject and standard, or under one or more University Professors or Lecturers in that subject. He shall, if his attainments come up to the standard prescribed for the degree of M.A., be granted a certificate to that effect, stating the subject and class in which he has passed.

4. A candidate who fails to pass, or to present himself for examination, shall not be entitled to claim a refund of the fee, but he may be admitted to any one or more subsequent M.A. Examinations on payment of a like fee of fifty rupees on each occasion.

5. A candidate may be examined in any of the following subjects :—

(I) English.
(II) Sanskrit.
(III) Pali.
(IV) Arabic.
(V) Persian.
(VI) Hebrew.
(VII) Greek.
(VIII) Latin.
(IX) Comparative Philology.
(X) Mental and Moral Philosophy.
(XI) History.
(XII) Political Economy and Political Philosophy.
(XIII) Mathematics.
(XIV) Physics.
(XV) Chemistry.
(XVI) Physiology.

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(XVII) Botany.
(XVIII) Geology.
(XIX) Zoology, and Comparative Anatomy.
(XX) Experimental Psychology.

6. There shall be a Practical Examination in subjects XIV to XX, and candidates shall be required to pass in the practical portion of these subjects as well as in the theoretical portion defined in the Syllabuses.

In each of the subjects I to XIII there shall be eight papers of three hours each, each carrying 100 marks.

In each of the subjects XIV to XX there shall be four theoretical papers, and the practical examination shall extend over at least four days. The total marks shall be equally divided between the theoretical and practical portions of the Examination.

7. Candidates who have taken the degree of B.A. with Honours in any of the subjects XIII—XX may be allowed to substitute a piece of research work for part of the M.A. Examination in that subject under the conditions laid down in the Regulations for the M.Sc. Degree.

In all these subjects the syllabuses shall be the same as those prescribed for the M.Sc. Examination.

8. The limits of the subjects shall be as follows :—

ENGLISH.

1. The M.A. course in English shall be divided into two groups.

2. The first four papers of each group shall be identical, and shall cover the following subjects :—

Paper I.—General History of English Literature.
Paper II.—The Drama.
Paper III.—Poetry.
Paper IV.—Prose.

3. The course for the above papers shall include standard works in Prose, Poetry and the Drama, which shall be specified from time to time, and shall range from Chaucer down to the end of the 19th century, due regard being had to the relative importance of the different periods.

4. The remaining papers shall be taken from one of the following groups, but not from both :—

GROUP A.

Paper V.—Chaucer, and the outlines of Historical English Grammar.

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Paper VI.—Shakespeare and the Elizabethan Drama, or a selected period of Poetry.
Paper VII.—A selected period of Prose.
Paper VIII.—An Essay or Essays on subjects connected with the course.

The special periods in Papers VI and VII shall be specified from time to time; no period shall be selected before Chaucer and not more than one shall be pre-Elizabethan.

GROUP B.

Paper V.—English language and literature prior to 1100.
Paper VI.—English language and literature from 1100 to 1500 including Chaucer.
Paper VII.—Historical English Grammar: including the elements of Teutonic Philology.
Paper VIII.—An Essay or Essays on subjects connected with the course.

5. In every paper where texts are prescribed, unseen passages shall be set from contemporary works, carrying 40 marks.
6. Questions on the text shall include—
(*a*) Questions on the subject-matter and
(*b*) Questions on the language of the text.

SANSKRIT.

The course shall include the following :—

Paper I.—(*a*) One selected Ashtaka of the Rigveda, with Sayana's Commentary thereon.
(*b*) Sayana's Introduction to his Commentary on the Rigveda .. .. .. 100 *marks.*

Paper II.—Siddhanta-Kaumudi (whole) .. 100 *marks.*

Paper III.—(*a*) The general principles and methods of Comparative Philology, including the elements of Phonetics.
(*b*) The history of the Indo-European family of languages, with special reference to Sanskrit (Vedic and Classical), and Prakrit.
(*c*) Sabda-saktiprakasika, and its bearing on the science of language .. .. .. 100 *marks.*

Paper IV.—Two Essays, (*a*) dealing with some subject connected with the history of Sanskrit literature generally;
(*b*) dealing with some subject connected with the history of the special Department covered by the group taken up .. .. .. 100 *marks.*

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Papers V, VI, VII and VIII.—One of the following groups to be selected by the candidate.

A. (*Literature*).

Paper V.—(*a*) Poetry texts. Selected portions of Naishadha Charita, Kamandaki Nitisara, Sukranitisara, Mahabharata (Santiparva, Rajadharma), and of either Kiratarjuniya or Sisupalbadha .. 75 *marks.*

(*b*) Translation from English into Sanskrit 25 *marks.*

Paper VI.—(*a*) Drama texts: Five of the following dramas, together with as much of Vararuchi's Prakrit Prakasa as is necessary for the appreciation of the Prakrit passages:

Vikramorvasi, Malavikagnimitra, Malati Madhava, Mahaviracharita, Mrichhakatika, Karpuramanjari, Venisanhara, Prabodh Chandrodaya, Balaramayana. 75 *marks.*

(*b*) Translation from English into Sanskrit .. 25 *marks.*

Paper VII.—(*a*) Prose texts: Selected portions of two of the following, namely, Kadambari, Harshacharita, Vasavadatta and Dasakumaracharita .. 75 *marks.*

(*b*) Unseen passages in Sanskrit Prose for translation into English .. .. .. 25 *marks.*

Paper VIII.—(*a*) Rhetoric and Prosody, namely, Kavyaprakash, Ekavali, Sarasvati Kanthabharana, Sahityadarpana and either Pingala's Chhanda Sutras with Halayudha's Vritti or Chhandomanjari.

(*b*) Unseen passages in Sanskrit Poetry for translation into English .. .. .. 25 *marks.*

B. (*Vedas*).

Paper V.—(*a*) Yaska's Nirukta and Pingala's Chhandasutras, with Halayudha's Vritti .. .. 75 *marks.*

(*b*) Pratisakhya of the Rig-Veda, with the Commentary of Uvata .. .. .. 25 *marks.*

Paper VI.—(*a*) Aitareya Brahmana with Sayana's Commentary .. .. .. 75 *marks.*

(*b*) Simple unseen passages in Vedic Sanskrit for translation into Classical Sanskrit. [The interpretations of any recognised Indian School will be accepted] 25 *marks.*

Paper VII.—(*a*) Selected portions of the Chhandogya and Brihadaranyaka Upanishads, with Sankara's Commentary .. .. .. 75 *marks.*

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(*b*) Simple unseen Sanskrit passages from any Upanishad for translation into English .. 25 *marks.*

Paper VIII.—(*a*) Grihya Sutra—either Asvalayana or Gobhila—with commentary .. 75 *marks.*

(*b*) Translation from English into Sanskrit .. 25 *marks.*

C. (*Mimansa and Smriti*).

Paper V.—(*a*) Selected portions of Mimansa Sutras with Sabara Bhashya .. .. 75 *marks.*

(*b*) Simple unseen Sanskrit passages from any treatise or commentary on the Mimansa Philosophy, such as the Sloka-Vartika and the Tantra-Vartika, for t anslation into English .. .. .. 25 *marks.*

Paper VI.—(*a*) Jaiminiya Nyaya Mala Vistara and Mimansa-Nyaya-prakasa .. .. 75 *marks.*

(*b*) Simple unseen Sanskrit passages from any treatise or commentary on the Mimansa Philosophy, such as the Mimansa-Balaprakasa, and the Tupteeka, for translation into English .. .. 25 *marks.*

Paper VII.—(*a*) Manu Samhita with Kulluka's Commentary; Dharma Sutras of Apastamba and Gautama with Haradatta's commentaries. .. .. 75 *marks.*

(*b*) Grihya-Sutra—either Asvalayana or Gobhila 25 *marks.*

Paper. VIII.—(*a*) Yajnavalkya Sanhita—with Vijnanesvara s Mitakshara.

Parasara's Institutes with Madhava's Commentary. 75 *marks.*

(*b*) Translation from English into Sanskrit .. 25 *marks.*

D. (*Vedanta*).

Paper V.—(*a*) Vedantasara (Jacob's Edition) Panchadasi, Vedanta Paribhasha, Hastamalaka (with Commentary), and Siddhantalesa 75 *marks.*

(*b*) Simple unseen Sanskrit passages from any work on Vedanta Philosophy such as the Vivarana-prameya-Sangraha for translation into English 25 *marks.*

Paper VI.—(*a*) Vedantasutras with Sankara Bhashya. 75 *marks*

(*b*) Translation from English into Sanskrit .. 25 *marks.*

Paper VII.—(*a*) Selected portions of Sribhashya 75 *marks.*

(*b*) Advaita-Brahma-Siddhi .. .. 25 *marks.*

Paper VIII.—(*a*) Bhagavadgita and selected portions of the Upanishads, with Sankara Bhashya 75 *marks.*

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(*b*) Passages for translation into English from the Anubhashya and the Saivabhashya .. 25 *marks*.

E. (*Sankhya and Yoga*).

Paper V.—(*a*) Sankhyasutras of Kapila, with Vritti of Aniruddha.
Sankhya-Karika of Iswarakrishna, with Bhashya of Gaurapada .. .. .. 75 *marks*.
(*b*) Simple unseen Sanskrit passages from any treatise or commentary on the Sankhya Philosophy, for translation into English .. .. 25 *marks*.

Paper VI.—(*a*) Sankhya Pravachana Bhashya. Sankhya-Sara and Sankhya-Tattva-Kaumudi 75 *marks*.
(*b*) Translation from English into Sanskrit .. 25 *marks*.

Paper VII.—(*a*) Yoga Sutras of Patanjali, with Bhashya of Vyasa and Vritti of Bhoja. Yoga-Vartika of Vijnana-Bhikshu .. .. .. 75 *marks*.
(*b*) Simple unseen Sanskrit passages from any treatise or commentary on the Yoga Philosophy, for translation into English .. .. 25 *marks*.

Paper VIII.—(*a*) Selected portions of the Yoga-Vasishtha. Sarvadarsan Sangraha .. .. 75 *marks*.
(*b*) Translation from English into Sanskrit 25 *marks*.

F. (*Nyaya and Vaiseshika*).

Paper V.—(*a*) Nyayasutras of Gautama, with the Bhashya of Vatsyayana, Vartika of Udyotkara, and Vritti of Visvanatha .. .. .. 75 *marks*.
(*b*) Simple unseen Sanskrit passages from any treatise or commentary on the Nyaya Philosophy, for translation into English .. .. 25 *marks*.

Paper VI.—(*a*) Nyayamanjari of Jayanta Bhatta
Selected portions of Khandana Khanda Khadya of Sriharsha .. .. .. 75 *marks*.
(*b*) Translation from English into Sanskrit .. 25 *marks*.

Paper VII.—(*a*) Bhasha Parichheda Siddhanta-muktavali Kusumanjali of Udayanacharyya with Commentary of Ruchidatta and gloss of Vardhamana 75 *marks*
(*b*) Tranlsation from English into Sanskrit .. 25 *marks*

Paper VIII.—(*a*) Vaiseshika Sutras of Kanada, with Bhashya of Prasastapada, Nyayakandali of Sridhara, and Vivritti of Jayanarayana.
Saptapadarthi of Sivaditya with Commentary of Yatindramadhava .. .. .. 75 *marks*.

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(*b*) Simple unseen Sanskrit passages from any treatise or commentary on the Vaiseshika Philosophy, for translation into English .. .. 25 *marks.*

G. (*General Philosophy*).

Paper V.—(*a*) Sankhyasutras of Kapila with Vritti of Aniruddha.
Either Sankhya Tattva-Kaumudi or Sankhya Karika.
Yogasutras of Patanjali, with the Bhashya of Vyasa and Vritti of Bhoja .. .. 75 *marks.*
(*b*) Simple unseen Sanskrit passages from any work on Philosophy for translation into English .. 25 *marks.*

Paper VI.—(*a*) Nyayasutras of Gautama with Bhashya of Vatsyayana and Vritti of Visvanatha. Vaiseshika-sutras of Kanada, with Bhashya of Prasastapada, and Nyayakandali of Sridhara .. 75 *marks.*
(*b*) Translation from English into Sanskrit .. 25 *marks.*

Paper VII.—(*a*) Vedantasara (Jacob's Edition), Bhagavadgita and selected portions of Vedantasutras, with Sankar Bhashya .. .. 75 *marks.*
(*b*) Translation from English into Sanskrit .. 25 *marks.*

Paper VIII.—(*a*) Nyayaratnamala of Parthasarathi Misra; Mimansa Nyaya Prakasa of Apadeva. Selected portions of the Upanishads, with Sankara Bhashya 75 *marks.*
(*b*) Simple unseen Sanskrit passages from any work on Philosophy for translation into English 25 *marks.*

H. (*Prakrit*).

Paper V.—(*a*) Two selected Jaina canonical texts 75 *marks.*
(*b*) Translation from English into Sanskrit (or Prakrit, at the option of the candidate) .. 25 *marks.*

Paper VI.—(*a*) Prakrit portions of the following dramas:—
Sakuntala, Virkramorvasi, Malavikagnimitra, Uttaracharita, Malatimadhava, Mahavira Charita, Mrichhakatika, Mudrarakhsasa, Ratnavali, Karpuramanjari, Venisanhara .. .. .. 75 *marks.*
(*b*) Translation from Sanskrit into Prakrit .. 25 *marks.*

Paper VII.—(*a*) Setubandha; Gaudavaho; Kumarapalacharita, together with a general knowledge of Prakrita Paingalam .. .. .. 75 *marks.*
(*b*) Simple unseen passages in Prakrit for translation into English .. .. .. 25 *marks.*

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Paper VIII.—(*a*) Prakrit Grammar, as in Vararuchi's Prakrita Prakas (Cowell), Chhandah's Prakrita Lakshanam (Hoernle) Hemchandra (Pischel).
Candidates are also expected to be familiar with the substance of Hoernle's Grammar of the Gaudian languages .. .. .. 75 *marks.*
(*b*) Simple unseen passages in Prakrit for translation into Sanskrit .. .. .. 25 *marks.*

I. (*Epigraphy and History*).

Paper V.—(*a*) Rajatarangini and its continuations with Stein's Introduction and Commentary 70 *marks.*
(*b*) Unseen passages in Sanskrit for translation into English. 30 *marks.*

Paper VI.—(*a*) Inscriptions of Asoka .. 80 *marks.*
(*b*) Early Indian Alphabets .. .. 20 *marks.*

Paper VII.—Selected Inscriptions from Epigraphia Indica, Fleet's Corpus Inscriptionum, and Prachina Lekha Mala. 100 *marks.*

Paper VIII.—(*a*) Ancient Geography of India .. 50 *marks.*
(*b*) Translation from English into Sanskrit .. 50 *marks.*

Questions on prescribed texts (except on Grammar) in the compulsory papers as also in every group shall include :—

(*i*) Passages for translation into English [this shall not carry more than 25 marks in any one paper].
(*ii*) Questions on the subject-matter and on the language of the set books.
(*iii*) Questions on grammar arising from the texts.
(*iv*) Passages for translation into English or discussion in simple Sanskrit, taken from standard Sanskrit Commentaries on the texts.

In groups C, D, E, F, and G, the questions on the prescribed texts shall also include alternative questions on philosophical topics for discussion in English (or in simple Sanskrit at the option of the candidate); in answering such questions, candidates will be expected to be able to state the views of the School taken up and controvert the views of the other Schools.

The first paper shall include questions on the History of Vedic Literature, and the History of Philosophy and Religion during the Vedic Period; such questions shall carry 25 marks.

The second paper, and in group H. the eighth paper, shall include questions on the practical application of the rules of grammar.

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The eighth paper in group A shall include questions framed with a view to test the ability of candidates to apply the rules of rhetoric to passages from the prescribed texts.

Passages set for translation from English into Sanskrit shall be translated into Classical (and not Vedic) Sanskrit.

The Syndicate shall upon the recommendation of the Board of Studies concerned, select the texts in accordance with the syllabus, and may also recommend books or specify editions to indicate more fully the extent and standard of knowledge required in any paper.

PALI.

Candidates may select one of the following groups :—

GROUP A. (LITERARY).

The literary course shall include (1) portions of the Southern Buddhist canonical scriptures with commentaries, expositions and hortatory writings, (2) Pali Grammar, (3) Sanskrit Grammar up to the B.A. pass standard, (4) portions of the Buddhist literature in Sanskrit, (5) the Sanskrit text prescribed for the Intermediate Examination in Arts, (6) the Comparative Philology of Pali, Prakrit, Sanskrit and their dialects, (7) the decipherment of the Asoka Inscriptions, and (8) the history of Buddhism and Buddhist Literature (both Southern and Northern).

Sections (1) and (2) shall comprise selected portions of the Jatakas and the Dhammapada, and the following works in particular :—

Anguttara Nikáya.
Thera-theri-gáthá.
The Sutta Pitaka.
Netti Pakarana.
The Sumangala Vilásiní.
The Paramattha Dípaní.
Kaccáyana's Pali Grammar.
Attha-Sáliní.

Section (4) shall include the Avadanakalpa-lata of Kshemendra and the Lalitavistara.

The papers shall be distributed as follows :—

Papers I and II	..	.. Section (1).
Paper III	..	.. Sections (2) and (3).
Paper IV	..	.. Sections (4) and (5).
Paper V	..	.. Section (6).
Paper VI	..	.. Section (7).
Paper VII	..	.. Section (8)
Paper VIII	..	.. An Essay on a subject connected with the course.

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GROUP B. (PHILOSOPHICAL).

The philosophical course shall comprise sections (1), (2), (3), (4) and (5) of the literary course, and the following additional subjects :—

Standard works of Buddhist Philosophy in Pali or Sanskrit, with Commentaries, Hindu accounts and criticisms of Buddhist Philosophy, and the history of Buddhism with special reference to the various Buddhist schools and sects.
Selected portion of the Abhidhamma, with commentary.
The Madhyamika Sutras with Commentary.
The Nyáya-vindu with the Tíká.
Dignága's Pramana-samuchchaya.
Hindu accounts and criticism of Buddhist Philosophy.
Chapter on Buddhism in the Sarvadarsana-Sangraha.
Sankara's Sariraka Bháshya. Tarakapada—section relating to Buddhism.
Criticisms of Udyotkara in the Nyaya-vartika.

The papers shall be distributed as follows :—

Papers I, II, III and *IV*, as in the literary course.

Paper V.

Selected portions of the Abhidhamma Pitaka, with commentary.
Buddhist ethics, with special references to the Párámitas.
The Nyáya-vindu with the Tíká.

Paper VI.

Nagarjuna's Madhyamika-Káriká with commentary.
Dignaga's Pramana-Samuchchaya.

Paper VII —Hindu accounts and criticisms of Buddhist Philosophy.
Tenets of the following Buddhist schools :—The Madhyamikas, the Sautrantikas, the Vaibhashikas, and the Yogacharis.

Paper VIII.—An essay on some subject connected with the course.

C. (EPIGRAPHICAL).

The first four papers shall be identical with those in the literary course.
The remaining four papers shall be as follows :—

Paper V.—(*a*) The Mahavansa (ed. Hardy.)
(*b*) Unseen passages in Pali for translation into English.

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Paper VI.—(*a*) Inscriptions of Asoka.
(*b*) Early Indian Alphabets.

Paper VII.—Selected Inscriptions from Epigraphia Indicâ, Fleet's Corpus Inscriptionum and Inscriptions of the Kshatrapa Princes.

Paper VIII.—(*a*) Ancient Geography of India.
(*b*) Translation from English into Pali.

HEBREW.

1. The course shall include the following :—

Paper I.—Passages for translation from English into Hebrew.

Paper II.—Passages for translation into English from certain specified books of the Old Testament, together with such questions on the Grammar, Prosody and literary history of the language as arise directly out of these books.

Paper III.—Simple passages from unspecified books in Hebrew for translation into English. Candidates may be required to point the passages as well as to translate them.

Paper IV.—Passages for translation into English from prescribed Post-Biblical Books, with questions arising out of the subject-matter of the texts.

Paper V.—Passages for translation into English from specified books in Syriac, including always a portion of the Peshitta version of the New Testament, together with questions on the language and subject-matter of the passages set.

Paper VI.—History and antiquities of the Jews with special reference to the results of modern research.

Paper VII.—Comparative Philology of the Semitic languages, or prescribed texts in Rabbinical Hebrew.

Paper VIII.—Essay on some subject connected with the course.

ARABIC.

The course in Arabic shall include the following works or portions thereof :—

Literature.

Kitáb-ul-Aghání.
Yatímat-ut-Dahr.

Tafsír.

Qor'án with the Commentary of Zamakhsari.

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Hadis.

Mishkát-ul-Masábíh.

Philosophy.

Ishárát of Avicenna.

History.

Majma'-ul-Buldán of Bilázurí.

Grammar.

Zamakhsharí's Mufassal.

Rhetoric.

Fará'id of Mahmúd Jawnpúrí.

2. The course shall also include Arabic Prosody, the outlines of Muhammadan History and a general knowledge of the History of Arabic Literature.

3. The subjects and the marks shall be distributed as follows :—

Paper I.—(*a*) Questions on the Kitáb-ul-Aghání .. 75 *marks.*
(*b*) English passages for translation into Arabic 25 *marks.*

Paper II.—(*a*) Questions on Yatímat-ut-Dahr .. 75 *marks.*
(*b*) English passages for translation into Arabic 25 *marks.*

Paper III.—(*a*) Unseen passages of Arabic prose for translation into English .. .. .. 60 *marks.*
(*b*) Questions on the History of Arabic literature 40 *marks.*

Paper IV.—(*a*) Questions on the Mufassal .. 50 *marks.*
(*b*) Questions on the Fará'id .. .. 50 *marks.*

Paper V.

(*a*) Questions on the prescribed portion of the Qor'án, with the commentary .. .. 50 *marks.*
(*b*) Questions on the Mishkát-ul-Masábíh .. 50 *marks.*

Paper VI.

(*a*) Questions on the Ishárát .. .. 50 *marks.*
(*b*) Questions on the Majma-ul-Buldan .. 50 *marks.*

Paper VII.

Questions on Muhammadan History.
(*a*) General .. .. .. 70 *marks.*
(*b*) India .. .. 30 *marks.*

Paper VIII.

Essay on some subject connected with the course.
100 *marks.*

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Questions on the prescribed texts shall include—

(i) Passages for translation into English, not carrying more than 25 marks in any one paper.

(ii) Questions on the subject-matter and the language of the passages set.

PERSIAN.

1. The course in Persian shall include the following works or portions thereof :—

Poetry.—The Hadíqa of Saná'í.
The Mantiq-ut-Tair of 'Attár.
The Díwán of Násir-i-Khusraw.
The Qasá'id of Zahír Fáryábí.

Prose.—Tazkira of Dawlat Shah.
The Tazkira of 'Awfí.
The Kímíyá-i-Sa'ádat of Ghazzáli.
The Durra-i-Nádira.
The Hadá'iq-ul-Balághat.

Arabic Prose.—The prose selections prescribed for the B.A. Pass Course.

2. The course shall also include the outlines of Muhammadan history and the history of the Persian language and literature.

3. The subjects and the marks shall be distributed as follows :—

Paper I.—Questions on the Hadíqa of Saná'í and the Mantiq-ut-Tair of 'Attár .. .. .. 100 *marks.*

Paper II.—Questions on the remaining prescribed poetry texts .. .. 100 *marks.*

Paper III.—(*a*) Questions on the Tazkiras of Dawlat Shah and of 'Awfí .. .. 50 *marks.*

(*b*) Questions on the remaining Persian Prose texts. 50 *marks.*

Paper IV.—Questions on Arabic Prose texts .. 100 *marks.*

Paper V.—(*a*) Unseen Persian passages for translation into English .. .. 50 *marks.*

(*b*) Questions on the Philology of the Persian language. 50 *marks.*

Paper VI.—(*a*) Translation from English into Persian. 70 *marks.*

(*b*) Questions on Rhetoric and Prosody .. 30 *marks.*

Paper VII.—(*a*) Questions on the History of Persian literature .. .. .. 50 *marks.*

(*b*) Questions on Muhammadan History .. 50 *marks.*

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Paper VIII.—Essay on a subject connected with the course.

Questions on the prescribed texts shall include—

(*i*) Passages for translation into English, not carrying more than 25 marks in any one paper.

(*ii*) Questions on the subject-matter and language of the passages set.

GREEK.

The course shall include :—

Paper I.—(*a*) Passages from prescribed prose texts. 70 *marks.*

(*b*) Unseen passages of Greek prose for translation into English .. .. .. 30 *marks.*

Paper II.—(*a*) Passages from prescribed poetry texts. 70 *marks.*

(*b*) Unseen passages of Greek poetry for translation into English .. .. .. 30 *marks.*

Paper III.—(*a*) Passages from prescribed Greek plays. 70 *marks.*

(*b*) Unseen passages from the Greek Dramatists for translation into English .. .. 30 *marks.*

Paper IV.—Passages in English for translation into Greek prose .. .. .. 100 *marks.*

Paper V.—The Philology of the Greek tongue and the elements of Comparative Philology .. 100 *marks.*

Paper VI.—The General History and Antiquities of Greece. 100 *marks.*

Paper VII.—History of Greek Literature .. 100 *marks.*

Paper VIII.—Essay on some subject connected with the course .. .. .. 100 *marks.*

In Papers I, II and III the questions on prescribed texts shall include—

(*i*) Passages for translation into English, which shall not carry more than 25 marks in any one paper.

(*ii*) Questions on the subject-matter and language of the text.

LATIN.

The course shall include—

Paper I.—Passages from prescribed poetry texts.

Paper II.—Passages from prescribed prose texts.

Paper III.—Unseen passages from Latin authors for translation into English.

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Paper IV.—Passages in English for translation into Latin prose.

Paper V.—The Philology of the Latin tongue and the elements of Comparative Philology.

Paper VI.—The general History and Antiquities of Rome.

Paper VII.—History of classical Latin Literature.

Paper VIII—Essay on some subjects connected with the course.

In Papers I and II the questions on the prescribed texts shall include :—

(*i*) Passages for translation into English which shall not carry more than 25 marks in any one paper.

(*ii*) Questions on the subject-matter and language of the texts.

COMPARATIVE PHILOLOGY.

The subject shall include—

(*a*) the general principles of the Science of Language,

(*b*) the Comparative Grammar of a particular branch of the Indo-European or the Semitic family of languages,

(*c*) the historical grammar either of the candidate's vernacular, or of one of the following classical languages : Sanskrit, Greek, Latin, Arabic, Hebrew, and

(*d*) an Essay on a subject connected with Philology.

Section (*a*) shall include (1) Phonetics, (2) Sematology, (3) Morphology of Language, (4) Families of speech with their subdivisions, their geographical distribution, and their interrelations, (5) Laws of change in Language, (6) Evolution of Language in the Race and in the Individual, (7) the contributions of Anthropology, Comparative Mythology, and Folklore to the Science of Language, and (8) History of Philological speculation, with the chief speculative problems of present-day Philology : the origin of language, the priority of language or dialect, the course of morphological development, the origin of inflections, and the relations of race and language.

Section (*b*) shall include (1) Comparative Phonology and Comparative Sematology, and (2) Comparative Morphology (including Comparative Syntax), of the branch of languages selected by the candidate.

Section (*c*) shall include the history (1) of the sounds, words and significations, and (2) of the forms and constructions, of the vernaculars of the candidate, or the classical language selected by him.

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The papers shall be distributed as follows :—

First	Paper ..	.. Section (*a*)—(1) and (2).
Second	,, ..	.. Section (*a*)—(3), (4) and (5).
Third	,, ..	.. Section (*a*)—(6), (7) and (8).
Fourth	,, ..	.. Section (*b*)—(1).
Fifth	,, ..	.. Section (*b*)—(2).
Sixth	,, ..	.. Section (*c*)—(1).
Seventh	,, ..	.. Section (*c*)—(2).
Eighth	,, ..	.. The Essay.

MENTAL AND MORAL PHILOSOPHY.

1. The course in Mental and Moral Philosophy shall be as follows :—

Paper I.—History of Ancient European Philosophy.
Paper II.—History of Mediæval and Modern European Philosophy.
Paper III.—Outlines of Indian Philosophy.
Papers IV, V, VI and *VII.*—Any two of the following subjects to be selected by the candidate, two papers being set in each :—

(*i*) Psychology.
(*ii*) Logic.
(*iii*) Ethics and Social Philosophy.
(*iv*) Philosophy of Religion.
(*v*) Some special branch of Indian Philosophy.

Paper VIII.—Essay.

2. Questions bearing on General Philosophy and Metaphysics may be included in any paper.
3. The limits of the subjects shall be defined and books shall be recommended from time to time by the Board of Studies concerned.

HISTORY.

1. The course in History shall be as follows :—

Paper I.—A selected period of English History.
Paper II.—A selected period of Indian History.
Paper III.—General History of the Ancient East.
Paper IV.—Constitutional History of England.
Paper V.—International Law.
Papers VI and VII.—Two papers in one of the following subjects selected by the candidate :—

(*i*) The History of Islam.
(*ii*) A special period of Indian History.
(*iii*) Economic History of England and India.

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(*iv*) Comparative Politics.
(*v*) A special period of European History,

or such other special subjects as may from time to time be prescribed by the Syndicate.

Paper VIII.—Essay.

2. Books shall be recommended and periods selected by the Board of Studies concerned, to indicate the extent and standard of knowledge required.

POLITICAL ECONOMY AND POLITICAL PHILOSOPHY

1. There shall be two groups in this subject, the first four papers being common to both, namely :—

For Groups A and B.

Papers I and II.—General Economics.
Paper III.—General Principles of Political Philosophy.
Paper IV.—Public Administration.
For Group A. (Political Economy).
Paper V.—General History of Economics.
Papers VI and VII.—Two papers on one of the following subjects :—

(*i*) The History, Theory and Present systems of Banking and Currency.
(*ii*) The History, Theory and Present organisation of International Trade.
(*iii*) The Theory and Practice of Statistics, including Demography.
(*iv*) The Mathematical principles of Political Economy or such other special subjects as may from time to time be prescribed by the Board of Studies concerned.

Paper VIII.—Essay.

For Group B. (*Political Philosophy*).

Paper V.—General History of Political Philosophy.
Papers VI and VII.—Two papers on one of the following subjects :—

(*i*) Comparative study of Political Institutions.
(*ii*) Comparative Study of Social Institutions.
(*iii*) International Law with reference to existing Political and Economic Institutions.

Paper VIII.—Essay.

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2. The limits of the subjects shall be defined and books shall be recommended from time to time by the Board of Studies concerned.

GENERAL.

1. (*a*) In order to pass in subjects I to XII a candidate must obtain 288 marks in the aggregate. No minimum pass marks shall be required in each paper, but if in any paper a candidate obtains less than 25 marks, those marks shall not be included in his aggregate. Candidates obtaining 360 marks shall be placed in the second class, and those obtaining 480 marks in the first class.

(*b*) In order to pass in subject XIII (Mathematics) a candidate must obtain 264 marks. No minimum pass marks shall be required in each paper, but if in any paper a candidate obtains less than 20 marks, those marks shall not be included in his aggregate. Candidates obtaining 320 marks shall be placed in the second class, and those obtaining 400 marks in the first class.

(*c*) In order to pass in subjects XIV to XX a candidate must obtain 132 marks in the aggregate of the four theoretical papers, and 160 marks in the Practical Examination. If in any theoretical paper a candidate obtains less than 25 marks, those marks shall not be included in his aggregate. Candidates obtaining 360 marks shall be placed in the second class and those obtaining 480 marks in the first class.

2. As soon as possible after the Examination the Syndicate shall publish a list of candidates who have passed in each subject, arranged in three classes and in order of merit. Candidates shall be bracketed together unless the Examiners are of opinion that there is clearly a difference in their merits.

Each successful candidate shall receive with his degree of M.A. a certificate setting forth the subject in which he was examined, and the class in which he was placed.

3. The candidate who is placed first in the first class in each branch shall receive a Gold Medal and a prize of books to the value of Rs. 200, and the candidate who is placed second in the first class in each branch shall receive a Silver Medal and a prize of books to the value of Rs. 100.

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CHAPTER XXXIV.

DOCTOR OF PHILOSOPHY.

1. Any Master of Arts of the University of Calcutta who has been placed in either the first or the second class at the examination for the Degree of Master, may offer himself as a candidate for the Degree of Doctor of Philosophy, provided three years have elapsed from the time when he passed the examination.

2. Every candidate shall state in his applica ion the special subject within the purview of the Regulations for the Degree of Master of Arts, upon a knowledge of which he rests his qualification for the Doctorate, and shall, with the application, transmit three copies, printed or type-written of a thesis that he has composed upon some special portion of the subject so stated, embodying the result of research, or showing evidence of his own work, whether based on the discovery of new facts observed by himself, or of new relations of facts observed by others, whether constituting an exhaustive study and criticism of the published work of others, or otherwise forming a valuable contribution to the literature of the subject dealt with, or tending generally to the advancement of knowledge. The candidate shall indicate generally in a preface to his thesis and specially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others, and the portions of the thesis which he claims as original; he shall further state whether his research has been conducted independently, under advice, or in co-operation with others, and in what respects his investigations appear to him to tend to the advancement of knowledge.

3. Every candidate may also forward with his application three printed copies of any original contribution or contributions to the advancement of the special subject professed by him, or of any cognate subject, which may have been published by him independently or conjointly, and upon which he relies in support of his candidature.

4. No application shall be entertained unless two Members of the Faculty of Arts, or two Doctors of Philosophy shall have testified, to the satisfaction of the Syndicate, that in habits and character the candidate is a fit and proper person for the Degree of Doctor.

5. Every candidate shall forward with his application a fee of Rs. 100. No candidate who fails to pass or present himself for examination shall be entitled to claim a refund of the fee.

6. The thesis mentioned in Regulation 2 and the original

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contributions, if any, mentioned in paragraph 3, shall be referred by the Syndicate to a Board of three examiners.

7. If the thesis is approved by the Board and if the candidate has obtained a first class at the examination for the Degree of Master of Arts, he shall not be required to submit to any further written examination; but he may be required by the Board, at their discretion, to appear before them to be tested orally, or practically, or by both these methods, with reference to the thesis, and the special subject selected by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the oral and practical examinations, if any; and if the Syndicate, upon the report, consider the candidate worthy of the Degree of Doctor of Philosophy, they shall cause his name to be published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of knowledge.

8. If the candidate is a person who has obtained a second class at the examination for the Degree of Master of Arts, and, if his thesis is approved by the Board, he shall be required to submit to a written examination.

Two papers of three hours each shall be set, one upon the special subject mentioned in the application of the candidate, and the other upon the subject of the thesis. The candidate may also be required by the Board, at their discretion, to appear before them to be tested orally or practically or by both these methods with reference to the thesis and the special subject professed by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the written examination, and also of the oral and practical examinations, if any; and if the Syndicate, upon the report, consider the candidate worthy of the Degree of Doctor of Philosophy, they shall cause his name to be published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of knowledge.

9. In the case of a candidate falling under the preceding Regulation, if the Board, upon an examination of his thesis and of his original contribution or contributions to the advancement of knowledge, hold the same to be generally or specifically of such special excellence as to justify the exemption of the candidate from the written examination, he may be so exempted by the Syndicate, provided that the report of the Board shall set forth the fact and the grounds of such exemption.

10. A diploma under the seal of the University, and signed by the Vice-Chancellor shall be delivered at the next convocation for conferring degrees to each candidate who has qualified for the degree.

11. Every candidate shall be at liberty to publish his thesis,

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and the thesis of every successful candidate shall be published by the University with the inscription: "Thesis approved for the Degree of Doctor of Philosophy in the University of Calcutta."

CHAPTER XXXV.

INTERMEDIATE EXAMINATION IN SCIENCE.

1. The Intermediate Examination in Science shall be held annually in Calcutta and such other places as shall, from time to time, be appointed by the Syndicate, the approximate date to be notified in the Calendar.

2. Any undergraduate of the University may be admitted to this examination, provided he has prosecuted a regular course of study in one or more Colleges affiliated for this purpose, for not less than two academical years after passing the Matriculation Examination.

Any student who has passed the Intermediate Examination in Arts may take up the course for the Intermediate Examination in Science at the second year's stage, and after one year's regular course of study appear at the examination. He will be excused attendance and examination in the subject or subjects in which he has already passed at the Intermediate Examination in Arts.

3. Every candidate sent up for the Intermediate Examination in Science by an affiliated College shall produce a certificate (*a*) of good conduct, (*b*) of diligent study, (*c*) of having satisfactorily passed the College Examinations and other tests, and (*d*) of probability of passing the examination. Every candidate for admission shall send in his application with a certificate in the form prescribed by the Syndicate either to the Registrar or to a local officer recognised by the Syndicate. Every such application must reach the office of the Registrar at least six weeks before the date fixed for the commencement of the examination.

4. A fee of rupees twenty-five shall be forwarded by each candidate with his application. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to any one or more subsequent Intermediate Examinations in Science on payment of a like fee of rupees twenty-five on each occasion, provided he produces a certificate from the Head of an affiliated College showing that he has prosecuted a regular course of study for one academical year since the date

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of the last examination, in each of the subjects in which he is to be examined.

5. The Intermediate Examination in Science shall be conducted by means of printed papers, the same papers being used at every place at which the examination is held.

6. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in three divisions, the first in order of merit, and the second and third in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

7. The subjects for the Intermediate Examination in Science shall be :—

1. English. .. .. .. *Three papers.*
2. Composition in one of the following vernacular languages :—Bengali, Hindi, Uriya, Assamese, Urdu, Burmese, Modern Armenian .. *One paper.*

If the vernacular of a candidate is a language not included in the above list, he shall have an alternative paper of a somewhat advanced character in English.

3. Chemistry .. .. .. *Two papers.*
4. Mathematics or Physics *Two papers in either subject.*
5. Any one of the following subjects :— *Two papers.*

(*i*) Mathematics, if not taken up as the 4th subject.
(*ii*) Physics, if not taken up as the 4th subject.
(*iii*) Botany.
(*iv*) Zoology.
(*v*) Geology.
(*vi*) Geography.
(*vii*) Physiology.

8. Candidates may also be examined, if they so desire, in an additional subject included under 5, provided they have not already taken the subject, or in French or German. In this optional subject there shall be two papers of three hours each.

9. No student shall be permitted to take up Mathematics for the B.Sc. Examination unless he has taken it up for the Intermediate Examination.

No student shall be permitted to take up Physics or Chemistry for the B.Sc. unless he has taken up both Mathematics and Physics for the Intermediate Examination.

10. Each paper shall be of three hours, and shall carry 100 marks.

11. No practical examination will be held by the University in connection with the science subjects in the Intermediate Examination in Science, but every student who desires to be examined in any such subject must produce a certificate from

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the Principal of his College to the effect that he has completed in an affiliated College the corresponding practical course prescribed by the Regulations.

12. The limits of the above subjects for both theoretical and practical work are defined below :—

ENGLISH, VERNACULARS, FRENCH, GERMAN.

As in the Intermediate Examination in Arts.

MATHEMATICS.

1. *Algebra.*

Theory of Quadratic equations and expressions.
Simultaneous Quadratic equations, one of which is linear.
Permutations and Combinations.
Variation : proportion.
Binomial theorem.
Theory of Indices.
Surds and imaginary quantities.
Logarithms.
Exponential and Logarithmic Series.
Graphs of simple algebraic functions and of the exponential and logarithmic functions.

2. *Plane Trigonometry.*

Measurement of Angles.
Trigonometrical ratios.
Application of algebraic signs ; angles of any magnitude.
Graphs of trigonometrical ratios.
Elementary trigonometrical formulæ and their applications.
Logarithmic Sines, Cosines, etc.
Relations between the sides and angles of a triangle.
Practical solutions of triangles with applications.

3. *Geometry.*

(*a*) Parabola.

Tracing the curves from the definition.
Latus rectum is four times the focal distance of the vertex.
$PN^2 = 4\ AS.\ AN.$

The middle points of parallel chords lie on a straight line parallel to the axis. The parameter of any diametar of a parabola is four times the line joining the focus with the vertex of the diameter.

$QV^2 = 4 \cdot SB.\ BV.$

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If any chord QQ′ intersects the directrix in D, SD bisects the exterior angle between SQ and SQ .

The tangent to the curve at its points of intersection with a diameter is parallel to the system of chords bisected by the diameter.

The portion of the tangent at any point intercep'ed between that point and the directrix subtends a right angle at the focus.

The tangent bisects the angle between the focal distance and the perpendicular on the directrix.

The subtangent is bisected at the vertex.

The normal at any point makes equal angles with the focal distance and the axis.

The subnormal is equal to half the latus rectum.

(*b*) Ellipse.

Tracing the curve from the definition.

The curve is symmetrical with regard to the minor axis and has a second focus and directrix.

$$CS.\ CX = CA^2.$$
$$SP + S'P = AA'.$$
$$CB^2 = SA.\ SA'.$$

If any chord QQ′ of an ellipse intersects the directrix in D, SD bisects the exterior angle between SQ and SQ′.

$$PN^2 : AN.\ A'N = CB^2 : CA^2.$$

The middle points of parallel chords lie on a straight line passing through the centre.

The tangent to the curves at either end of a diameter is parallel to the system of chords bisected by the diameter.

The portion of the tangent at any point intercepted between that point and the directrix subtends a right angle at the focus and conversely.

The tangents at the ends of a focal chord intersect on the directrix.

The tangent at any point of an ellipse makes equal angles with the focal distances of the point.

(*c*) Solid Geometry.

One and only one plane may be made to pass through any two intersecting straight lines.

Two intersecting planes cut one another in a straight line and in no point outside it.

If a straight line is perpendicular to each of two intersecting straight lines at their point of intersection, it is also perpendicular to the plane in which they lie.

All straight lines drawn perpendicular to a given straight line at a given point are co-planar.

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If two straight lines are parallel and if one of them is perpendicular to a plane, the other is also perpendicular to the same plane.

Of all straight lines drawn from an external point to a plane, the perpendicular is the shortest; of obliques drawn from the given point those which cut the plane at equal distances from the foot of the perpendicular are equal.

Straight lines in space which are parallel to a given straight line are parallel to one another.

The projection of a straight line on a plane is itself a straight line.

If a straight line outside a given plane is parallel to any straight line drawn on the plane, it is also parallel to the plane itself.

If a straight line is perpendicular to a plane, any plane passing through the perpendicular is also perpendicular to the given plane.

If two intersecting planes are each perpendicular to a third plane, their line of section is also perpendicular to that plane.

In a tri-hedral angle, the sum of any two of the face angles is greater than the third.

In a convex solid angle, the sum of the face angles is less than four right angles.

4. *Elementary Statics and Dynamics.*

(*a*) Uniform and uniformly accelerated motion, composition and resolution of velocities, accelerations, etc.

Definition of mass, momentum, force.

Newton's laws of motion.

Units of force and measurement.

Composition and resolution of forces acting at a point.

Simple illustrations of Newton's laws; projectiles, motion of a particle on an inclined plane, motion of two particles connected by a string, uniform circular motion

(*b*) Equilibrium of forces.

Resolution and composition of parallel forces in one plane.

Centre of parallel forces.

Centre of gravity. Mass centre.

Reduction of any system of co-planar forces acting on a rigid body to a single resultant force or couple.

Conditions of equilibrium for co-planar forces

Friction.

Machines.

(*c*) Impulse of a force.

Conservation of linear momentum for a system of particles.

Simple cases of impact of two spherical bodies moving in the same plane.

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Work and energy.

Application of the principle of energy to the solution of simple problems.

Two papers shall be set of three hours each, the first being allotted to Algebra, Plane Trigonometry and Geometry, and the second to Elementary Statics and Dynamics.

In all the subjects only such examples and questions may be introduced by way of illustration or explanation as arise directly out of the propositions themselves.

PHYSICS.

Elementary Physics.

(*a*) General ideas—

Units of measurement and definitions of mass, force and motion.

Laws of motion.

Work and energy.

General properties of solids, liquids and gases.

Motions of translation and rotation.

Laws of pressure of liquids and gases, measurement of pressure.

Equilibrium of floating bodies.

Specific gravity.

Motion of pendulum.

(*b*) Heat—

Laws of expansion of solids, liquids and gases under heat.

Measurement of temperature.

Quantity of heat. Specific heat. Changes of molecular state, and latent heat of molecular changes of state.

Vapour-pressure; boiling point, dew point; formation of cloud, fog and dew.

Radiation, conduction and convection of heat.

The connection between heat and work.

Steam-engines.

(*c*) Light—

Laws of transmission of light, its intensity and velocity.

Shadows.

Photometry.

Reflexion of light at plane and spherical surfaces and the formation of images.

Refraction of light at plane and spherical surfaces and by prisms. Chromatic dispersion. Spectra.

Formation of images by single lenses.

The combination of two lenses to form (1) a simple telescope, (2) a compound microscope.

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(*d*) Magnetism—

Properties of magnets.
Simple phenomena of magnetism and of magnetic induction.
The magnetic field; lines of force. The law of magnetic force.
The earth as a magnet.

(*e*) Frictional electricity—

Electrical attractions and repulsions.
Properties of conductors and non-conductors.
Electrical induction.
The law of electric force.
* { Electrical field; strength of field.
  { Potential; capacity.
Distribution of electrification on conductors.
Simple condensers. Leyden jars.
Electrophorus.
Frictional machines and Voss's machine.
Electric discharge.

(*f*) Dynamic electricity—

Voltaic cell; electric current.
Magnetic effect of a current; simple galvanometers.
Primary batteries.
Electromotive force; difference of potential; resistance.
Ohm's law; volt; ohm; ampere.
Heating effects of currents.
Elementary phenomena of electrolysis.
Electromagnets.
Action of magnets on currents, and of currents on currents.
Elementary phenomena of electro-magnetic induction.

(*g*) Sound—

The production and propagation of sound.
Reflection and refraction of sound.
Nature of wave motion.
Experimental determination of velocity of sound in air.
Musical sound and noise.
Relation between frequency and pitch; Siren.
Vibration of strings, sonometer.
Vibration of air-columns; organ pipes.

The Course in Physics shall be mainly experimental. Candidates will be expected to show a general acquaintance with the apparatus by which the elementary principles of Physics are illustrated and applied.

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* Only elementary notions on these points will be required.

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Practical Course.

Length measurements by millimetre rule. Eye-estimation of tenths of a division.

Use of the vernier, linear and angular measurement of areas by plotting on squared paper.

Measurement of angles by protractors.

Verification of the laws of the inclined plane.

Verification of the laws of friction.

Determination of the centre of gravity of a plate.

Time of swinging of a simple pendulum. Verification of the formula t varies as l.

Use of the balance weighing to one centigramme.

Determination of specific gravities of solids and liquids by the hydrostatic balance.

Verification of Boyle's law.

Determination of fixed points of thermometers.

Simple methods of determining specific heat and latent heat of fusion.

Reading the barometric height.

Verification of the laws of reflection and refraction.

Use of simple photometers.

Refractive index of glass plates

Focal length of a concave mirror.

Focal length of convex lenses.

Production of a pure spectrum by means of a slit, lens and prism.

Verification of the simple laws of magnetism.

Determination of the poles of a bar magnet.

Tracing the lines of force in the neighbourhood of a magnet.

Verification of the simple laws of electrostatics.

Use of gold-leaf electroscopes.

Setting up common and voltaic cells.

Use of simple galvanometers.

Measurement of resistance by a simple form of Wheatstone's bridge.

CHEMISTRY.

Gaseous, liquid and solid states of matter; effect of pressure and temperature on volumes of gases; chemical and physical changes; elements and compounds; common laboratory processes—mixture, solution, crystallization, distillation, evaporation, precipitation, filtration, decantation, desiccation, combination by weight and volume, decomposition, combustion, oxidation, reduction, neutralization; terminology and nomenclature; symbols, formulæ, equations, calculation of formulæ from percentage composition, and calculations relating to weight

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and volume; laws of chemical combination and Dalton's atomic theory.

Study of the following substances :—hydrogen, oxygen, water, nitrogen, air, ammonia, nitric oxide, nitric peroxide, nitric acid, sulphur, sulphuretted hydrogen, sulphur dioxide, sulphuric acid, carbon, carbon monoxide, carbon dioxide, carbonic acid, marsh gas, chlorine, bromine, iodine, hydrochloric acid, hydrobromic acid, hydriodic acid, sodium, calcium, magnesium, zinc, iron, copper, mercury, and their oxides, hydroxides, chlorides, nitrates and sulphates.

Practical Course.

Fitting up of simple apparatus, *e.g.*, a wash-bottle.

Performance of experiments involving Solution, Filtration, Distillation and Crystallisation.

Determination of the Water of Crystallisation of hydrated salts.

Preparation and study of the principal properties of Hydrogen and Oxygen.

Performance of experiments illustrating the Chemistry of Fire, Air and Water.

Performance of experiments involving Oxidation and Reduction. Simple Blowpipe analysis.

Determination of the equivalent of Zinc and Hydrogen.

Preparation and study of the principal properties of Sulphur Dioxide, Nitric Acid, Oxide, Nitrous Oxide, Ammonia, Carbon Dioxide, Hydrochloric Acid, Chlorine and Sulphuretted Hydrogen.

Simple qualitative detection of Mercury, Copper, Iron, Zinc, Calcium, Magnesium and Sodium from a solution containing not more than one of these metals.

Standardisation of a given Acid solution.

BOTANY.

(*a*) Elementary General Morphology, including a study of the outline of the life-history of selected plants to illustrate the gradual ascent in complexity of stucture and reproductive cycle from the lowest fungi and algæ to the phanerogams.

(*b*) The principles of classification as illustrated by common plants; outlines of any one of the modern systems of classification. Referring plants to their natural orders.

(*c*) Elementary Histology—Structure and formation of cells. Union of cells into tissues; principal types of tissue; tissue systems. Structure and development of roots, leaves, and floral organs. Glands and glandular organs. Microchemical reac-

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tions of cellulose and its modifications, of starch, and of protoplasm.

(*d*) Elementary Plant Physiology, illustrated by simple experiments—Absorption of water; movement of water and gases within the plant; chemistry of the plant-body; food materials of plants, their sources and form; photo-synthesis; digestion, assimilation, transpiration; nutrition, metabolism; reserve-materials. Growth; influence of external conditions on growth. Irritability. Reproduction, sexual and asexual.

Practical Course.

Use of simple and compound microscopes. Dissection of flowers involving the use of a pocket lens, and needle and a pen-knife. Referring plants to the Natural Orders mentioned in the theoretical syllabus. Microscopic examination of chief plant tissues under simple conditions. Water-culture experiments; experiments on the functions of chlorophyll, its formation and decomposition; experiments on the relation between starch formation and external conditions. Experiments on root-pressure, on the flow of sap from injured parts, on the influence of external conditions on transpiration, on the mobility of water in wood, and on the absorption of mineral substances by the root. Simple experiments on respiration. Movements of growth. Germination experiments.

The course shall include the drawing of parts of plants and of sections.

PHYSIOLOGY.

General view of the Anatomy of the animal body :—

The human skeleton. The skull. The spine. The thorax. Shoulder girdle. The arm. The pelvic girdle. The leg. Joints. Ligaments and tendons.

The relations of the internal organs contained in the cranial, thoracic and abdominal cavities, and a detailed knowledge of the structure of one limb considered as a mechanical appliance.

Histology of the following structures :—

Red and white blood-corpuscles; epithelium (squamous, ciliated and columnar); connective tissues including cartilage (hyaline, white-fibro and yellow elastic), bone, fibrous tissue; muscle; medullated nerve fibre and liver.

Chemical composition of the body. Proteid. Fat. Carbohydrate. Mineral salts.

E ementary Chemistry of blood, lymph and urine.

Chemical composition of food; the quantities and kinds of food required to balance the losses of the system.

The phenomena of muscular contraction.

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Circulation of the blood. The structure of the heart The auricles and ventricles. The valves. The arteries and veins.

The beat of the heart. The heart-sounds. The flow of blood. The pulse. The proof of circulation.

Respiration.—The structure of the lungs. The exchange of gases between blood and air, and blood and tissues. The cavity of the chest. The diaphragm. The mechanism of respiration.

The processes of digestion and absorption :—The teeth. The salivary glands. Saliva. The stomach. Gastric juice. Chyme. Pancreatic juice and bile. Villus. The mesenteric vessels and portal vein. The lacteals and chyle.

Excretion.—The structure of the kidneys. The secretion of urine. The skin and the sweat glands.

Production and regulation of animal heat.

General view of the Physiology of the brain and the spinal cord :— The structure of the brain. The cranial nerves. The spinal cord. Anterior and posterior roots. Excitability of a nerve. Reflex action.

Physiology of the organs of sense, and also of the organs of voice and speech :—Taste. Smell. Touch. The muscular sense. The structure of the Eye. The sense of sight. The ear and the sense of hearing. The mechanism of the larynx. The voice and speech.

Practical Course.

I.—A general acquaintance with the following Physiological instruments :—

Simple Myograph. Hæmoglobinometer. Hæmocytometer. Ice-freezing Microtome.

II.—Preparation and examination under the microscope of the following structures :—

Blood-corpuscles (mammalian and non-mammalian).
Epithelium (squamous, columnar and ciliated).
Striped muscle fibres, medullated nerve fibres.
Hyaline cartilage and bone.
The liver.

III.—Practical acquaintance with the chemical physiology of Egg-albumen, Egg-globulin, Starch, Maltose and Milk.

ZOOLOGY.

The General Morphology and Physiology of the cell and of the simple tissues ; cell division.

The general characters of the Protozoa. The shells of For-

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aminifera and of Radiolaria. The structure and life-history of the infusoria.

The general characters of the Cœlenterata. The structure and life-history of a Hydra.

The general characters of the Echinodermata. The structure and life-history of a Starfish.

The structure and life-history of a Leech.

The general characters of the Annelida. The structure and mode of life of an Earthworm.

The general characters of the Arthropoda, and of their leading sub-divisions. The structure and life-history of a Crayfish and a Cockroach.

The general characters of the Mollusca and of their leading sub-divisions. The structure and life-history of a fresh water Mussel and a Snail.

The structure and mode of life of Amphioxus.

The structure of an Elasmobranch Fish, more specially he skeleton and the circulatory system.

The structure of the Bekti.

The structure and life-history of a Frog.

The structure and life-history of a Pigeon, more specially the skeleton.

The general characters of the Mammalia.

The structure of a Rabbit, more specially the skeleton, and the digestive and circulatory systems.

Practical Course.

I. The use of the compound microscope. A general acquaintance with the histology of the cell and the elementary tissues of the animal body.

II. Dissection of the circulatory, respiratory and alimentary systems of the Earthworm, the Crayfish, the Frog, the Pigeon and the Rabbit; and also a practical study of the general anatomy of the nervous system of these types.

GEOLOGY.

The objects of Geology and the distinctions between Dynamical, Structural and Stratigraphical Geology, Petrology, Mineralogy and Palæontology.

The general relations of the lithosphere, hydrosphere and atmosphere. The distinction between crust and nucleus. Evidences of internal heat.

General physical characters of the continental plateaux and oceanic depressions. Physical characters of the continents, the chief mountain ranges and river systems.

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Composition of the Earth's crust. Definition of a mineral. Methods of examining minerals for physical and chemical characters; specific gravity; hardness; fracture; colour; transluccency. Characters of crystals; lustre; geometrical relations of the systems of crystals and their grades of symmetry; chemical and crystallographic isomorphism; pseudomorphism; twinning. The principal physical properties and chemical compositions of the following minerals:—Native gold, silver, copper, mercury, platinum, arsenic, antimony, bismuth and sulphur; diamond, graphite, halite, fluor-spar, galena, blende, cinnabar, pyrite, chalcopyrite, orpiment; corundum, hæmatite, cassiterite, rutile, quartz, chalcedony, opal, spinel, magnetite, chromite; borax, calcite, dolomite, magnesite, siderite, malachite, olivine, the pyroxene and amphibole groups, talc, topaz, tourmaline, kaolin, the felspars, micas, garnets, zircon, nitre, apatite, barytes, anhydrite, gypsum, alunogen, alum, melanterite.

Definition of a roc . Distinction between igneous, aqueous and metamorphic rocks. Classification of igneous rocks (*a*) according to origin, (*b*) according to chemical composition. General differences between the structural characters of plutonic and volcanic rocks. Characters of dyke-rocks. Nature of the chief structures of rocks: granitic, granulitic, porphyritic, poikilitic, diabasic, miarolitic, felsitic, vitreous. Description of granites, syenites, diorites, gabbros, peridotites, felsites, rhyolites, trachytes, andesites, dolerites, basalts, obsidian, pumice, tachylyte, volcanic tuffs and ashes. Classification of aqueous rocks and description of the characters and modes of occurrence of the following:—shale, sandstone, conglomerate, ooze, chalk, limestone, peat, lignite, coal, tufa or travertine, oolite, flint and chert, sinter, laterite.

Metamorphic rock :—gneisses, schists, slates, marbles, quartzites.

Composition of the atmosphere. Chemical and mechanical action of atmospheric agents on rocks. The formation of soils and laterite. The geological action of underground water; the formation of caverns, and stalactites; origin of springs. The nature and work of glaciers. The destructive and reproductive work of rivers; cañons, deltas; river erraces. Origin of landslips. The formation and destruction of freshwater lakes. The origin and nature of salt-lakes.

Composition of the ocean. Nature of the principal marine deposits and the conditions under which they are formed. The formation of coral-reefs. Raised beaches.

Volcanic phenomena and products; distribution of volcanos; geysers. Earthquakes: definition of seismic focus, epicentre, isoseismal lines. Secular upheaval and depression.

Origin of stratification; the consolidation of strata. The

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preservation of surface markings on strata. False bedding. Disturbance of horizontality by earth-movements; dip, strike and outcrop; various forms of folds; anticlinal and synclinal folds. Normal and reversed faults; hade, throw; thrust-planes. Unconformity. Cleavage of rocks. Joints. Modes of occurrence of igneous rocks: bosses, dykes, contemporaneous lava-flow, intrusive sheets, volcanic ash-beds, volcanic necks.

Conditions under which organic remains are preserved. Definition of a fossil. The value of fossils in forming a chronological classification of strata. The equivalence of isolated systems of strata. The subdivisions of geological time. The chief features of the Archæan group. The leading palæontological differences between the Palæozoic, Mesozoic and Cainozoic groups. The order of stratigraphical systems in the European standard; stratigraphical scale. The division of post-Archæan strata in India into Purana, Dravidian and Aryan groups. Description of the following systems and series: Dharwar, Bijawar, Cuddapah, Kurnool, Vindhyan; the Cambrian, Productus Limestone, and Triassic formations of the Salt Range; the chief occurrences of marine Jurassic strata; the Gondwanas; the Cretaceous formation of South India; the Lower Tertiary formations; the Siwalik series. The Indo-Gangetic alluvial deposits.

Practical Course.

Determination of the hardness and specific gravity of a mineral specimen. The recognition of hand specimens of the minerals and rocks mentioned in the syllabus. The use of the contact goniometer. The determination of dip and strike. The drawing of sections from geological maps. The recognition of specimens illustrating the following classes and orders of fossils:—Foraminifera, Radiolaria, Sponges, Corals, Graptolites, Echinoderms, Bryozoa, Brachiopoda, Pelecypoda, Gastropoda, Cephalopoda, Trilobites.

GEOGRAPHY.

The regional geography of the World, with a more detailed treatment of India, Southern and South-Eastern Asia and Japan, Britain and the countries of Western Europe, and the United States of America.

In addition to the Matriculation Course the following:—

The movements of the Earth and their consequences. The commoner methods of map projection. Methods of representing relief. Contour lines and sections.

The general circulation of the atmosphere; disturbing factors, form and elevation of the land surface, and the unequal heating of sea and land. Distribution of rainfall and aridity, of per-

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manent, seasonal and variable winds, of land and sea climate. Cyclonic and anticyclonic movements of the air and their relation to humidity and rainfall.

The general relief of the ocean floor, and the deposits upon it. Ocean currents in relation to climate and commerce. The causes of the tides, and their effect upon the situation and commercial importance of ports.

Land forms: their classification and origin. Crustal movement. Volcanic action. Weathering and erosion. Results of glacial action. The work of rivers.

The general distribution of Flora and Fauna, with special reference to environment and uses: climatic zones.

The general distribution of minerals, and their accompanying or dependent industries.

Man and his markets, with special reference to the British Empire.

The distribution of the human race; formation and expansion of Nationalities.

The treatment of the regions named for special attention shall have reference to the characteristic, physical and climatic features, natural resources, industries, trade, distribution of population, the principal towns and internal lines of communication, the people in regard to race, language and national development.

A more advanced knowledge of general principles shall be required than in the Matriculation Examination.

Practical Course.

Elementary Cartography. Drawing Plans and Maps, including examples from the student's immediate surroundings. Drawing statistical diagrams on squared paper. Modelling in sand and clay. Mercator's Projection. Orientation and elementary determination of latitude. Simple meteorological observations; temperature, pressure humidity (wet and dry bulb thermometers). Wind direction, clouds and rainfall. Study of Meteorological Charts

GENERAL.

1. In order to pass the Intermediate Examination in Science a candidate must obtain—

In English	108 *marks.*
In the Vernacular or the alternative paper ..	36 *marks.*
In each of the remaining compulsory subjects taken up.	60 *marks.*
And in the aggregate of the compulsory subjects	340 *marks.*

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2. In order to be placed in the first division a candidate must obtain 500 marks.

In order to be placed in the second division 400 marks.

If a candidate has passed in the compulsory subjects and in the aggregate, the marks in excess of 60 obtained by him in the optional subject, if any, shall be added to his aggregate, and the aggregate so obtained shall determine his division and his place in the list.

3. Any candidate who has failed in one subject only, and by not more than 5 per cent. of the full marks in that subject, and has shown merit by gaining 50 per cent. or more in the aggregate of the marks of the examination, shall be allowed to pass.

4. If the Moderators are of opinion that in the case of any candidate not covered by the preceding Regulations, consideration ought to be allowed by reason of his high proficiency in a particular subject, or in the aggregate, they shall report the case to the Syndicate, and the Syndicate may pass such candidate.

5. Candidates who, after passing the Intermediate Examination in Arts, appear for the Intermediate in Science, shall be required, in order to pass, to obtain 36 per cent. in each subject for which they present themselves in the latter examination.

CHAPTER XXXVI.

BACHELOR OF SCIENCE.

1. An examination for the Degree of Bachelor of Science shall be held annually in Calcutta, and such other places as shall from time to time be appointed by the Syndicate, and shall commence at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any undergraduate of the University may be admitted to the examination, provided he has prosecuted a regular course of study, for not less than two academical years after passing the Intermediate Examination in Science, in one or more Colleges affiliated to the University in the subjects which the candidate takes up.

3. Every candidate sent up for the B.Sc. Examination by an affiliated college shall produce a certificate (*a*) of good conduct, (*b*) of diligent study, (*c*) of having satisfactorily passed the college periodical examinations and other tests, and (*d*) of probability of passing the examination. Every candidate shall send in his application, with a certificate in the form prescribed

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by the Syndicate to the Registrar at least six weeks before the date fixed for the commencement of the examination. If he desires to be examined for Honours in any subject he shall name the subject in his application. If a candidate offers Experimental Psychology he shall be required to give the Registrar notice of the fact twelve months before the date of the examination.

4. A fee of Rs. 40 shall be forwarded by each candidate with his application.

A candidate who fails to pass or to present himself for examination, shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to one or more subsequent examinations for the Degree of Bachelor of Science on payment of a like fee of Rs. 40 on each occasion, provided he produces a certificate from the Head of an affiliated College, shewing that he has prosecuted a regular course of study for one academical year since the date of the last examination, in each of the subjects in which he is to be examined.

5. The Examination for the Degree of Bachelor of Science shall be conducted by means of printed papers, the same papers being used at every place at which the examination is held.

6. Every candidate shall be examined in three of the following subjects selected by himself :—

(I) Mathematics,
(II) Physics,
(III) Chemistry,
(IV) Botany,
(V) Geology.
(VI) Zoology.
(VII) Physiology,
(VIII) Experimental Psychology.

7. No student shall be permitted to take Mathematics for the B.Sc. Examination unless he has taken it up for his Intermediate Examination.

No student shall be permitted to take up Physics or Chemistry for the B.Sc. Examination unless he has taken up both Mathematics and Physics for the Intermediate Examination.

8. A candidate may take up the Pass Course in three subjects, or the Pass Course in two subjects and the Honours Course in one subject. In the Pass Course, in any subject except Mathematics, there shall be two theoretical papers and one paper in practical work. In the Honours Examination in any subject except Mathematics there shall be four theoretical and two practical papers. In Pass Mathematics, there shall be three theoretical papers. In Honours Mathematics, there shall be six theoretical papers.

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9. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed in the Pass Course, arranged in alphabetical order, together with a list of those who have obtained Honours in each branch, arranged in two classes, both in order of merit. Each successful candidate shall receive with his Degree of B.Sc. a certificate in the form entered in Appendix A.

10. The limits of the above subjects for both theoretical and practical work are defined below.

MATHEMATICS.

The papers in Mathematics shall be distributed as follows :—

Pass Course.

Paper I.

1. *Higher Plane Trigonometry.*

Properties of triangles.
General values of angles which have the same sine, cosine, etc.
Submultiple angles.
Inverse circular functions.
Summation of series.
De Moivre's theorem.
Exponential values of sine and cosine.
Expansion of sin θ and cos θ in powers of θ.

2. *Plane Analytical Geometry.*

Co-ordinates, cartesian and polar.
Transformation of co-ordinates ; change of axes.
The straight line ; equations representing a pair of straight lines.
The circle.
The parabola.
The ellipse.
The hyperbola.

Paper II.

3. *Differential Calculus.*

Variables and constants.
Functions ; the graph of a function.
Limits ; differentiation. Infinitesimals, differentials, successive differentiation, Taylor's and Maclaurin's theorems. Maxima and minima.
Differentiation of a function of several variables ; partial differentiation.
Simple geometrical and physical applications.

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4. *Integral Calculus and Differential Equations.*

Integration, summation.
Elementary integrals.
Integration by parts.
Partial fractions.
Integration of irrational and trigonometrical functions.
Differential equations of the first order involving two variables.
Linear equations with constant co-efficients.
Simple geometrical and physical applications.

Paper III.

5. *Hydrostatics.*

Nature and properties of fluid pressure.
Density and specific gravity of a homogeneous mixture.
Determination of the pressure of a heavy liquid in simple cases.
Centre of pressure.
Conditions of equilibrium and stability of equilibrium for a floating body.
Properties of elastic fluids and determination of pressure.
Measurement of heights by the barometer.
Determination of specific gravities.
Mixture of gases.
Description of the barometer, air-pump, common and force pumps, the diving bell, the balloon, siphon, and Brahmah's press as applications of hydrostatical principles.

6. *Astronomy.*

The subject is to be treated mathematically but without the use of spherical trigonometry.
The Earth.
Transit instrument, meridian circle, equatorial and micrometer.
Atmospheric refraction.
The sun and the solar system.
Parallax.
Determination of the first point of Aries.
Precession, nutation, aberration.
The moon.
Lunar and solar eclipses.
Measurement of time.
Determination of latitude and longitude by simple methods.
The fixed stars.

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Honours Course.

Paper I.

1. *Higher Algebra.*

Binomial theorem.
Convergence and divergence of series.
Inequalities.
Simple continued fractions.
Summation of series.
Determinants.

2. *Elementary Theory of Equations.*

General properties of equations.
Relation between roots and co efficients of equations.
Transformation of equations.
Algebraic solution of cubic and biquadratic equations.
Limits of the roots of equations.
Solution of numerical equations.

Paper II.

3. *Higher Plane Trigonometry.*

In addition to a fuller treatment of the Pass Course the following :—

Expansion of $\sin^n\theta$, $\cos^n\theta$, $\sin n\theta$, $\cos n\theta$. Hyperbolic functions.
Expansion in series.
Resolution of circular and hyperbolic functions into factors.

4. *Plane Analytical Geometry.*

In addition to a fuller treatment of the Pass Course, the general equation of the second degree in Cartesian co-ordinates.

Paper III.

5. *Elementary Solid Geometry.*

Cartesian and polar co-ordinates.
The straight line and plane.
The sphere.
The cone and cylinder.
The ellipsoid.
The hyperboloids.
The paraboloids.
Generating lines and sections of quadrics, conjugate diameters.
Diametral planes and principal planes.
Curvature of surfaces. Meunier's theorem.

6. *Elementary Principles of Vectors.*

Fundamental notions.

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Addition, subtraction, multiplication and division of vectors.
Simple physical applications.

Paper IV.

7. *Differential Calculus.*

In addition to a fuller treatment of the Pass Course, an increased number of geometrical, physical and analytical applications.

8. *Integral Calculus and Differential Equations.*

In addition to a fuller treatment of the Pass Course :—
Formulæ of reduction.
Simple cases of definite integrals.
Graphical methods.
Fourier's series.
Differential equations of the first and second orders involving two variables only.

Paper V.

9 *Statics.*

Composition and resolution of forces.
General conditions of equilibrium of a particle under the action of co-planar forces.
Equilibrium of a particle on plane curves.
Composition and resolution of co-planar forces acting on a rigid body.
Principle of virtual work.
Simple machines.
Friction.
Centroids and centres of mass.
Simple cases of equilibrium of flexible inextensible strings.

10. *Dynamics of a particle.*

Velocity, acceleration.
Laws of motion.
Rectilinear, parabolic, circular, and harmonic motion.
Impact.
Work and energy.
Central orbits.

Paper VI.

11. *Hydrostatics.*

The subjects of the Pass Course treated more fully.

12. *Astronomy.*

The subjects of the Pass Course treated more fully

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PHYSICS.

The papers in Physics shall be distributed as follows :—

Pass Course (Theoretical).

Paper I.

(*a*) *General ideas*—

1. Wave motion :—

Simple harmonic motions.
Combination of wave motions.
Resolution of complex wave motions into simple harmonic wave motions.

2. Potential :

Definition of potential.
Calculation of potential in simple cases.
Determination of force from potential.
Fundamental propositions respecting lines of force, equipotential surfaces and tubes of force.

3. General properties of matter :—

Elasticity. Young's modulus; simple elasticity treated experimentally.
Friction.
Viscosity of liquids and gases.
Surface tension.
Capillarity.

(*b*) *Heat.*—More thorough acquaintance with the parts of the subject prescribed for the Intermediate Examination in Science and a greater power of working problems on Heat will be expected from the candidates.

(*c*) *Light.*—Besides a more thorough acquaintance with he parts of the subject prescribed for the Intermediate Examination in Science, a knowledge of the following will be expected from the candidates :—

Optical description of the eye.
Optical instruments ; sextants, lenses, microscopes ; telescopes, spectrometers.
Achromatic Combinations.
El ments of the wave theory of Light.
Simple cases of interference, double refraction and polarisation.

Paper II.

(*d*) *Sound.*—Besides a fuller treatment of the parts of the sub-

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ject prescribed for the Intermediate Examination in Science the following :—

Measurement of frequency and wave lengths of sound vibrations.
Doppler's principle.
Resonance.
Interference of sound waves. Beats.
Harmonic tones, their generation and function.
Longitudinal vibration of rods.
Vibration of plates.
Vibration of tuning forks and bells.
Nature of musical sounds.
Vocal organs of man.

(*e*) *Frictional electricity*—

This subject treated more immediately in connection with potential, with the addition of the following parts :—
Theory of electric condenser of simple geometrical form. Specific inductive capacity and its measurement. Electrometer.
Electrostatic units.

(*f*) *Dynamic electricity*—

Besides a fuller treatment of the parts of the subject prescribed for the Intermediate Examination in Science, the following :—

Galvanometers
Measurement of electric force, conductivity, resistance and current.
Electro-magnetic units and their relation to electrostatic units.
Effect of temperature on electric resistance.
Electrolysis. Theory of voltaic and electrolytic cells.
Thermo-electricity including Peltier and Thomson effects.

(*g*) *Magnetism*—

Besides a fuller treatment of the parts of the subject prescribed for the Intermediate Examination in Science, the following :—

Magnetic moments and methods of comparing them.
Determination of declination, dip and intensity of the magnetic force of the earth.
Methods of magnetisation.
Magnetic potential.
Magnetic properties of iron and steel. Permeability.
Hysteresis. Diamagnetism.

The subjects are to be treated mathematically as well as experimentally, as far as the Mathematics of the Intermediate Course are applicable.

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Pass Course (Practical).

Use of { Callipers. Screw-gauge. Spherometer.

Use of the balance.

Reading and correcting the barometer.

Determination of specific gravities.

Determination of the modulus of elasticity of a given wire by stretching.

Determination of the intensity of gravity by the pendulum.

Measurement of the linear co-efficient of linear expansion of metals.

Measurement of the co-efficient of increase of pressure of a gas.

Measurement of the co-efficient of expansion of air at constant pressure.

Determination of the laws of cooling.

Determination of the specific heat of solids and liquids.

Determination of the latent heat of water and steam.

Determination of the dew-point.

Determination of the velocity of sound by resonance columns.

Use of the sonometer.

Determination of the focal length of lenses and concave mirrors.

Photometric measurements.

Determination of the magnifying power of combinations of lenses.

Adjustment and use of the spectroscope and the spectrometer.

Comparison of magnetic moments.

Distribution of magnetism along a magnet.

Determination of the axis of a magnetised body.

Measurement of magnetic dip with corrections.

Determination of the constant of a tangent galvanometer.

Measurement of the resistance of wires.

Comparison of electromotive forces.

Honours Course (Theoretical).

Candidates will be expected to know the notation and elementary principles of the differential and integral calculus.

In addition to the subjects of the Pass Course, the following :—

(*a*) *Heat*—

The elementary principles of thermo-dynamics.

(*b*) *Geometrical optics*—

Spherical aberration.

Dispersion.

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Prismatic analysis of light.
Explanation of lines in the solar and other spectra.

(c) *Physical optics—*

Interference of light.
Refraction of light.
Measurement of wave-length. Colour of thin plates. Double refraction.
Polarisation of light by reflection, refraction and double refraction.
Interference of polarised light as shown by double refracting crystals.
Polariscopes and Polarimeters.
Elliptic and circular polarisation.
Rotation of the plane of polarisation.

Honours Course (Practical).

In addition to the Pass Course, the following :—

Use of the balance with Corrections for displacement of air.
Calibration of tubes.
Determination of Young's modulus of a given rod by bending.
Experimental determination of moments of inertia.
Measurement of surface tension by means o. capillary tubes.
Determination of the co-efficient of expansion of liquids.
Determination of the specific heat of liquids by the method of cooling.
Determination of vapour pressure.
Determination of vapour density.
Determination of frequency by a siren.
Determination of the velocity of sound in rods by Kundt's tube.
Determination of the refractive indices of solids and liquids.
Mapping of spectra.
Measurement of wave lengths by gratings.
Measurement of magnetic moment and Earth's horizontal force.
Verification of galvanometer by electrolytic experiments.
Measurement of heat developed by current.

The laboratorty note-books of candidates in Physics shall be inspected by the Examiner, and if they are found to be unsatisfactory, the candidates shall be disqualified. Note-books which have not been signed at frequent intervals by the Professor under whom the candidates worked shall not be accepted.

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The papers in the Honours Course shall be distributed as follows :—

Paper I.—General Ideas and Sound.
Paper II.—Heat.
Paper III.—Light.
Paper IV.—Electricity and Magnetism.
Paper V., *Paper VI.* } Practical examination.

CHEMISTRY.

Pass Course.

Theoretical —Essential features of chemical and physical change ; chemical notation and nomenclature ; interpretation of chemical formulæ ; classification and mutual relations of the elements ; laws of chemical combination by weight and volume ; atomic threoy ; Avogadro's hypothesis and its application ; valency : compound radicles ; conditions of chemical change and the thermal changes ccompanying it ; laws of electrolysis ; methods of determination of equivalent, atomic, and molecular weights ; diffusion of gases ; dialysis ; acids, bases, and salts ; basicity of acids and acidity of bases ; allotropy ; dissociation ; isomerism ; polymerism ; homology.

Preparation and properties of the following elements and their chief compounds :—Oxygen, hydrogen, nitrogen, argon, fluorine, chlorine, bromine, iodine, sulphur, boron, carbon, silicon, phosphorus, arsenic, sodium, potassium, ammonium, calcium, strontium, barium, magnesium, zinc, cadmium, mercury, copper, silver, gold, aluminium, manganese, iron, tin, lead, antimony, bismuth ; and the following compounds of carbon :—methane and ethane with their simple derivatives, namely, haloid derivatives, aldehydes, alcohols, monobasic acids, ethers, esters, ketones, acetyl chloride, acetic anhydride, and acetamide ; oxalic, tataric and citric acids ; cane sugar, invert sugar and starch ; ethylamine, cyanogen, hydrocyanic acid, potassium ferro-and ferri-cyanides, urea ; benzene, mono-chlorbenzene, mono-nitrobenzene, aniline, phenol, toluene, benzyl, alcohol, benzaldehyde and benzoic acid.

Practical :—Preparation, and performance of experiments illustrating the properties of—oxygen, hydrogen, chlorine, sulphur dioxide, sulphuretted hydrogen ; hydrochloric, nitric, carbonic and oxalic acids ; ammonia and caustic soda ; oxides, hydroxides, chlorides, sulphides, sulphates and nitrates of calcium, magnesium, iron, copper, mercury and lead.

A thorough practical acquaintance with methods of blow-pipe analysis and dry tests.

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Easy qualitative analysis of inorganic substances or mixtures containing not more than two salt radicles, positive or negative, that occur in the theoretical course.

Experimental examination of the following organic susbtances given single :—methyl alcohol ; ethyl alcohol ; glycerine ; formic, acetic oxalic, tartaric and citric acids ; urea ; benzene and benzoic acid.

Volumetric estimation of alkalies, alkaline carbonates and acids. Gravimetric estimation of crystallized copper sulphate or any similar substance. Simple determinations of Chemical Equivalent.

About one-third of the questions should be from Organic and two-thirds from Inorganic Chemistry.

Honours Course.

In addition to a fuller treatment of the subjects for the Pass Course, the following :—

Inorganic Chemistry (Theoretical).

Influence of solutes on freezing and boiling points of solvents ; ionic and hydrate theories of solutions ; osmosis and laws of osmotic pressure ; dialysis.

Study of the following elements and their principal compounds : Selenium, Tellurium, Lithium, Cæsium, Rubidium, Chromium, Nickel, Cobalt, Platinum, Helium and Radium.

Organic Chemistry (Theoretical).

Azo and diazo-compounds ; phenyl hydrazine ; dioxybenzene and quinone ; salicylic, toluic and phthalic acids ; naphthalene and anthracene.

Inorganic Chemistry (Practical).

The mixtures for qualitative analysis may include not more than four salt radicles, positive or negative, from the following list :—Silver, lead, mercury, copper, bismuth, cadmium, tin, arsenic, antimony, iron, manganese, aluminium, chromium, zinc, cobalt, nickel, calcium, strontium, barium, magnesium, potassium, sodium, ammonium ; oxides, hydroxides, chlorides, bromides, iodides, sulphides, sulphites, sulphates, chromates, carbonates, phosphates, nitrates, and nitrites.

A more complete knowledge of volumetric and gravimetric analysis.

Organic Chemistry (Practical).

The mixtures for qualitative analysis may include not more than two of the substances from the following list :—Hydrocyanic

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acid, formic acid, benzoic acid, oxalic acid, acetic acid, tartaric acid, citric acid, salicylic acid, cane sugar, glucose, starch, methyl and ethyl alcohols, glycerine, benzene, aniline, phenol and urea.

Questions may also be set on quantitative estimation of nitrogen, carbon and hydrogen in organic bodies; estimation of molecular weight of organic acids; determination of vapour density by Victor Meyer's method.

The laboratory note-books of candidates in Chemistry shall be inspected by the Examiner, and if they are found to be unsatisfactory, the candidates will be disqualified. Note-books which have not been signed at frequent intervals by the Professor under whom the candidates work will not be accepted.

BOTANY.

Pass Course.

I. General Morphology of—

(*a*) Phanerogams—including a study of the following subjects in detail:—Branch systems; phyllotaxis; origin of members. General Morphology should be studied with reference to œcological principles.

(*b*) Cryptogams.

II. Histology:—cell-contents and their microchemical reactions. Structure and development of cells and tissues.

III. Physiology, including the following subjects—treated experimentally:—Absorption of water; movement of water and gases within the plant; chemistry of the plant-body; food materials of plants, their sources and form; photosynthesis; digestion, assimilation, transpiration; nutrition, metabolism; reserve-materials. Growth. Movement of protoplasm. Action of gravity, heat, light, and electricity. Some facts connected with symbiosis and carnivorous plants. Mechanical movements (hygroscopic movements; dehiscence of fruit; mechanical ejection of seeds). Autonomous movements (nutation, sleep). Movements due to irritability (mechanical, chemical, and physical irritants; twinning). Geotropism, Heliotropism. Transport of food-stuffs and of the products of photosynthesis. Asexual and sexual propagation of plants.

IV. The study of the life-history of the following:—Yeast, Chroococcus, a Desmid, Mucor, Chara, Spirogyra, Ulothrix, Vaucheria, Peronospora, a Moss, Marchan-

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tia, a Fern, Lycopodium and Sellaginella, Equisetum, Cycas, a Conifer, a Monocotyledon and a Dicotyledon.

V. The principles of classification as illustrated by common plants; outlines of the chief modern systems of classification. Identification of plants by analytical tables. Referring plants to their natural orders.

VI. A knowledge of the systematic position, morphological characters, use and cultivation of some of the more important economical plants (rice and other cereals, pulses, vegetables, fruit-trees, sugar-producing plants, tea, the fan-palm, the bamboo, a few important timber trees, indigo, jute, cotton).

Practical Course.

1. The making, staining and description of microscopical sections of plants.
2. Referring commonly occurring plants to their Natural Orders.
3. Identification of plants by analytical tables.
4. Drawings of dissections of flowers and of microscopical sections
5. Physiological experiments :—

Water-culture experiments; experiments on the functions of chlorophyll its formation and decomposition; experiments on the relation between starch formation and external conditions. Experiments on root pressure, on the flow of sap from injured parts, on the influence of external conditions of transpiration, on the mob lity of water in wood, and on the absorption of mineral substances by the root. Simple experiments on respiration. Movements of growth. Germination experiments.

Honours Course.

The same as the Pass Course with the following additions :—

(*a*) A more extensive knowledge of the characterization and classification of tissue-systems from the anatomico-physiological point of view.

(*b*) Experiments on the food of plants—organic food-stuffs; the mycorrhiza in relation to humus; experiments with penicillium, saccharomyces, parasitic fungi, and nitrogen-bacteria. Experiments on osmosis and plasmolysis. Vriess's Law considered in the light of the modern theory of solutions. Experiments on the metabolic processes in plants. A more detailed account of the sexual propagation of Thallo-

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phyta, Archegoniatæ, and Siphonogamæ with additional examples to those already mentioned in the Intermediate Course. The decay of plants; humus; putrefaction bacteria. Ferments.

(*c*) Historical Botany. A short sketch of the occurrence of plants in former geological periods. A few of the more important type fossils of the Bengal coal-fields. A concise account of the theory of evolution.

(*d*) Botanical Œcology treated with special reference to Indian conditions:—Water: characteristic features of hygrophytes, tropophytes, xerophytes, and hydrophytes; hygrometric influences on sexual reproduction; dispersal of seeds by water. Heat: Zero-points of plant-life; Cardinal Points of plant-functions; acclimatization. Light: influence of intensity and quality. Air: atmospheric and dissolved oxygen effects of barometric pressure and of wind. Soil: physical and chemical properties; effects produced by sodium chloride, reh, and calcium carbonate. Animals: cross fertilisations; ornithophilous and entomophilous plants. Relation of ants to plants. Formations: climatic and edaphic; their characteristics.

(*e*) Geographical Botany, with special reference to the tropical zones and Geographical regions of India.

(*f*) Practical course:—

A. Collection and preservation of specimens. Exercises in the dissection and identification of dried plants. Identification of species belonging to the more difficult orders (*e.g*, Umbelliferæ, Amaranthaceæ, Piperaceæ, Orchidaceæ, Aroidaceæ, Graminaceæ).

B. Microscopical Examination and a more detailed practical study of any one of the following groups, their special morphology and mode of propagation—

I. Algæ: Conjugatæ.

II. Fungi: one of the following—Saprolegnieæ, Peronosporineæ, Mucorineæ, Pezizineæ Uridinales, Hymenomycetineæ.

III. Pteridophyta: Polypodiaceæ.

IV. Selaginella, Salviniaceæ and Marsiliaceæ.

GEOLOGY.

Pass Course.

Besides a more precise and thorough acquaintance with the subjects prescribed for the Intermediate Examination in Science,

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a knowledge of the following additional questions shall be required :—

The methods for determining the form, size and weight of the Earth.

Precise descriptions of the physical features of India and Burma.

The rate of downward increment of the internal heat of the Earth.

Methods of investigating the optical properties of crystals by light transmitted through thin sections. The construction and use of the Nicol's prism and the dichroiscope ; pleochroism ; interference ; effects in polarised light. The relation of internal physical properties to the geometrical forms of crystals. The use of the reflecting goniometer. The 32 grades of crystal symmetry. Crystal axes ; systems of indices ; law of rationality of indices ; crystal habit ; the twinning of crystals. Paramorphism. Description of the following additional minerals : sylvite, copper-glance, argentite, millerite, marcasite, mispickel, realgar, stibnite, bismuthite, molybdenite, pyrrhotite, erubescite, tetrahedrite, pyrargyrite, bournonite, cuprite, periclase, brucite, göethite, diaspore, limonite, bauxite, gibbsite, anatase, brookite, pyrolusite, tridymite, braunite, psilomelane, franklinite, chrysoberyl, natron, rhodochrosite, aragonite, witherite, strontianite, cerussite, chondrodite, ilmenite, sphene, serpentine, apophyllite, anda usite, kyanite, sillimanite, leucite, nepheline, sodalite, lapis-lazuli, scapolite, stilbite, chabasite, analcite, natrolite, epidote, axinite, staurolite, chlorite, beryl, cordierite, vivianite, pyromorphite, vanadinite, monazite, turquois, torbernite, columbite, thenardite, celestite, anglesite, kieserite, epsomite, goslarite, blödite, crocoite, wulfenite, wolfram, pitchblende.

The microscopic characters of the leadin varieties of igneous rocks. Description of the family of nepheline syenite, and their plutonic and volcanic relatives. The origin and nature of meteorites. Nature of the following structures :—granophyric, aphanitic, hyalopilitic, glomeroporphyritic, taxitic, perlitic, mylonitic. The stages in the development of crystalline structure : devitrification. Petrographical provinces. Magmatic differentiation and segregation. Phosphatic deposits. Anthracite. Amber. Petroleum. Asphalt. Bauxite and clay ironstone. Rock salt. Alkaline deposits.

Artesian wells. Mineral springs. Denudation as a measure of geological time. The geological action of animals and plants.

Causes and phenomena of the different varieties of metamorphism.

Description of the leading lithological characters and distinctive fossils of the groups and systems in the European standard statigraphical scale compared with the recognised succession in

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India. A knowledge of the special characters and distribution of the chief series in India. The principles of correlation.

Practical Course.

The recognition of specimens of the minerals and rocks enumerated in the foregoing syllabus. Drawing and description of crystals. The use of heavy liquids for the separation of minerals according to their specific gravities. The determination of the pleochroism, angle of extinction and character of double refraction in microscopic sections of minerals. The preparation and description of microscopic sections of rocks. The recognition of the following genera of fossils :—

Globigerina, Orbitolites, Textularia, Nummulites, Orbitoides, Zapphrentis, Cyathophyllum, Calceola, Omphyma, Isastræa, Favosites, Syringopora, Halysites, Stromatopora, Dictyonema; Monograptus, Didymograptus; Pentacrinus, Cyathocrinus, Marsupites, Encrinus, Echinus, sphærites, Cideris, Micraster; Fenestella; Lingula, Crania, Productus, Orthis, Rhynchonella, Stringocephalus, Terebra tula, Spirifer; Nucula, Leda, Arca, Glycimeris, Gervillia, Inoceramus, Halobia, Monotis, Ostrea, Gryphæa, Exogyra, Unio, Trigonia, Pecten, Lima, Mytilus, Pholadomya, Astarte, Hippurites, Lucina, Cardium, Tellina, Pholas; Dentalium; Patella, Pleurotomaria, Bellerophon, Euomphalus, Turbo, Natica, Turritella Melania, Cerithium, Cypræa, Pyrula, Murex, Fusus, Voluta, Conus, Tentaculites, Paysa, Limnæus, Planorbis, Helix; Orthoceras, Nautilus, Tropites, Ceratites, Arcestes, Phylloceras, Baculites, Scaphites, Belemnites; Agnostus, Trinucleus, Phillipsia, Calymene, Phacops; Estheria, Cypris.

Glossopteris, Neuropteris, Lepidodendron, Voltzia.

Honours Course.

In addition to a more complete and detailed knowledge of the subjects prescribed for the Pass Course, candidates will be expected to show an acquaintance with the philosophical bearings of geological data, and with the economic aspects of mineral deposits, including the means usually adopted to estimate their quantities and variation in value according to local conditions. They will be expected to recognise leading species of the fossil genera enumerated for the Pass Course, and to assign to them their geological ages.

The laboratory note-books of candidates shall be inspected by the Examiner, and if they are found to be unsatisfactory, the candidates shall be disqualified. Note-books which have not been signed at frequent intervals by the Professor under whom the candidates worked shall not be accepted.

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ZOOLOGY.

Pass Course.

I. General Principles of Biology. The cell in development and inheritance. The evidences bearing on the Hypothesis of Evolution. General Theories of Variation, Heredity, Adaptation and Origin of Species.

II. (*a*) Distinctive characters of the Invertebrate groups and the structure and habits, etc., of Protozoa, Porifera, Cælenterata, Platyhelminthes; Nemathelminthes, Echinodermata, Arthropoda and Mollusca.

(*b*) The distinctive characters, etc., of the Chordata groups and the structure and habits, etc., of Adelochorda, Urochorda, Cyclostomata, Pisces, Amphibia, Reptilia, Aves and Mammalia.

III. Genera knowledge of the Indian orders of mammals.

IV. The outlines of the development of the Frog and the Chick.

V. Principles of Geographical distribution of animals.

VI. General facts of Geological distribution of animals.

The Practical Examination shall include the dissection, microscopical examination and description of the following types :— Amœba, Paramœcium, Hydra, Leech, Cray-fish, Bekti, Frog, Pigeon and Rabbit.

Honours Course.

The Pass subjects treated much more fully, and in addition—

1. The Embryonic development of the Mosquito.
2. The dissection, microscopical examination, and description of the Cockroach, Malaria mosquito and House lizard.

The laboratory note-books of candidates shall be inspected by the Examiner and if they are found to be unsatisfactory, the candidates shall be disqualified. Note-books which have not been signed at frequent intervals by the Professor under whom the candidates worked shall not be accepted.

PHYSIOLOGY.

Pass Course.

I. Chemical Physiology.

The ultimate and proximate principles of the animal body.

The Chemistry of albumen and its allies, carbohydrates, fats and mineral solids found in the body and the food.

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II. Histology.

Microscopical appearance of blood, lymph and milk.
Histology and development of the cell.
Segmentation of Ovum and formation of germinal membranes.
Minute structure of the various organs and tissues of the animal body.

III. General Physiology.

Properties and General Physiology of Contractile Tissues.
Functions and General Physiology of Nerve-cells and Nerve fibres.
Nutrition.
The Circulation of the Blood.
Respiration: internal and external.
Processes involved in digestion and Absorption of food.
Principles of Metabolism—anabolic and katabolic. Internal Secretion.
Excretion by kidneys, skin, lungs, and liver.
Production and regulation of animal heat.
Mechanism of Locomotion, Voice and Speech.
Physiology of the Brain and the Spinal cord and of the Sympathetic nervous system.
Physiology of the Organs of Sense.

PRACTICAL COURSE.

(*a*) The Chemistry of Starch, Glycogen, Sugars, Albumen Globuline Milk, Blood, Urine and the Digestive Juices and their actions.
(*b*) The more common Histological Methods and the Minute Anatomy of the Elementary Tissues, Salivary Glands, Œsophagus, Stomach, Small and Large Intestines, Pancreas, Liver, Spleen, Lymphatic Gland, Thymus, Thyroid, Kidney, Lung, Skin, Tongue, and Spinal cord.
(*c*) The most important Physiological Instruments, and the Methods of Physical Investigation of the functions of various organs as embodied in a number of experiments to be specified from time to time.

HONOURS COURSE.

The Honours Course shall include the same subjects as the Pass Course treated more fully, and the standard of the Examination shall be higher than that of the Pass.

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Practical Course.

The same as the Pass Course, with the addition of the following :—

(*a*) Chemistry of Muscle, Nerve, Hæmoglobin and its derivatives and Pigments of Bile and Urine.

(*b*) More advanced Histological technique and a detailed knowledge of the minute structure of Cerebrum, Cerebellum, Medulla Oblongata, Pons Varolii, Eye, Ear, Taste buds, Olfactory Mucous Membrane, Olfactory Bulb, Ovary and Testis.

(*c*) A number of additional experiments to be specified from time to time.

The laboratory note-books of candidates shall be inspected by the Examiner and if they are found to be unsatisfactory, the candidates shall be disqualified. Note-books which have not been signed at frequent intervals by the Professor under whom the candidates worked shall not be accepted.

EXPERIMENTAL PSYCHOLOGY.

Pass Course.

The examination shall consist of the following parts :—

(1) General Psychology .. .. *One paper.*

The Syllabus shall be identical with the Syllabus in Psychology (Pass Course) for the B.A. Examination.

(2) Experimental Psychology .. .. *One paper.*

Analysis of Sensation.

Qualities of Sensation. Theory of specific nervous energy. Touch : heat spots, cold spots, pressure spots, pain spots. Taste : distribution of sensitiveness over the tongue, taste mixtures and contrasts. Smell : compensations and contrasts. Hearing : simple tones, simple clang and its analysis, timbre, noises and their analysis, partial tones, beats, combination tones. Sight : colour tones, the white black series, saturation ; colour zones in the Retina, colour mixtures, colour contrasts, after-images.

Intensity of sensation : methods of measurement. Stimulus-threshold. Difference-threshold. Weber's Law. Fechner's Law. Individual differences of sense endowment.

Analysis of Perception : localisation and projection. Spatial perception. Local signs. Tactile space. Localisation of points on the skin. Combined Touch and Movement. Spatial Perception of the Blind. Visual space : the Retinal image, the mechan-

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ism of accommodation, Eye-movement. Binocular vision. Perception of form, distance and size. Visual perception of movement. Optical illusions. Auditory perception. Binaural audition. Localisation of sound. Consonance., harmony and rhythm. Illusions and pre-perceptions.

Attention : intensity, duration and fluctuations of attention, maximal range of attention.

Ideation : ideational types, memory-types, Galton's questionary.

Association of ideas, and its conditions. Experimental tests.

Time relations of mental phenomena. Reaction time and its elements. Psychophysical time and its elements. Simple Reaction, Complex Reaction, Apperception-time, Will-time. Circuit of consciousness. Effects of Attention, Practice and Fatigue, on Reaction time. Subjective estimation of time-length and time order.

(3) Practical Examination .. .. *One day.*

The practical examination shall be conducted with special reference to the use of apparatus and psycho-physical methods (including statistics), and the mode of carrying out an experimental investigation submitted to the candidate. The candidate shall be required to examine an individual on acuity of senses (including liminal sensations and the difference-threshold), colour vision, tone discrimination, localisation, estimation of spatial and temporal magnitudes, ideational type, intensity and range of attention, association of ideas, and reaction-times.

Honours Course.

The examination shall consist of the following parts :—

(1) General Psychology .. .. *One paper.*

The Syllabus shall be identical with the Syllabus in Psychology (Honours Course) for the B.A. Examination.

(2) Physiological and Comparative Psychology. *One paper.*

The Nervous System :—

Nerve-tissues : chemical constitution, structural forms, and physiological functions.

The Nervous System of Man :—

The sympathetic system, the cerebrospinal system, the spinal cord, and the encephalic centres ; structure and functions. Spinal and cranial nerves.

The Muscular System :—

Structure and functions of muscles, muscles and muscular groups, the locomotive apparatus, the human hand, the vocal organs, the so-called nerve-muscle machine.

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Nature of nerve current: various theories. The laws of nervous conduction, the paths of conduction in the spinal cord and the brain, automatic and reflex functions of central organs, localisation of cerebral functions.

End-organs of smell, taste, touch, hearing and sight: Structure and functions.

Development of the nervous system in Mollusca, Arthrozoa and Vertebrata. Embryonic development of the nervous system of man. The physiological basis of spatial perception, localisation, retention, association and revival of ideas, imagination, verbal memory and language, feeling, pleasure and pain, emotional expression, automatic and reflex action, instinct, heredity, attention, and acts of the will.

Normal and abnormal states. Subliminal consci usness, double consciousness, hypnotism, reverie, dream, hallucinations, sleep.

Mental Evolution in the animal kingdom: instinct and animal intelligence.

Mental evolution in the race: Mental characteristics of primitive races, race-consciousness.

Mental evolution in the Individual. Mental characteristics of different ages and sexes.

(3) Experimental Psychology .. .. *Two papers.*

In addition to the Pass Course, the following subjects:—

Analysis of sensation:—

Theory of specific energy:—Evidence from the end organs of Hearing, Sight and Touch.

Touch—Temperature.—Determination of the Zero-point, adaptation and con rast in temperature sensations.

Temperature and Pressure spots:—Construction of maps of the skin.

Smell:— The field of smell.

Hearing:—Sensitiveness of the ear to differences of pitch and purity of interval.

Sight:—The colour triangle, the colour pyramid. Laws of colour mixture and colour contrast. Visual after-images, negative and positive. Theories of Helmholtz, Hering and Wundt.

Intensity of sensation:—Stimulus-threshold and difference-threshold for tactile, auditory, visual and muscular sensations. Fechner's formulæ; interpretations of Weber's Law.

Analysis of Perception.—

Touch:—Discrimination (1) of a single point, (2) of two points, on the skin. Discriminative sensibility of the skin for motion.

Localising of muscular sensations.

Visual space:—the Reduced Eye of Listing, corresponding

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Retinal points and double images. Stereoscopic and Perspective vision.

Ideation :—Galton's questionary, and other methods.

Association of Ideas :—Experimental tests of frequency, recency and other conditions.

Trains of ideas. Speed of mental trains : individual differences.

Time relations of mental phenomena :—

Smallest interval of separate sensations Rise and fall of intensity of sensation. Simple Reaction—the natura , the sensorial and the muscular reaction. Discernment-time for sensations. Discernment-time for localisation. The reading and the multiplication of numbers. Discernment with choice and speed of decision. Association-time. Individual differences.

(4) Practical Examination in Experimental Psychology.
Two papers.

The practical examination shall cover the entire course as laid down in the above syllabus on Experimental Psychology. The examination shall be conducted with special ref rence to the use of apparatus and psycho-physical methods (including statistics), and the mode of carrying out experimental investigations submitted to the candidate, and shall include the examination of an individual or individuals with regard to any matter within the scope of the syllabus.

The distribution of subjects as regards the examination in Experimental Psychology shall be as follows :—

First theoretical paper, and first day's Practical Examination :—Sensation and Perception.

Second theoretical paper, and second day's Practical Examination :—Attention, Ideation, Association of Ideas, and Time-relations of mental phenomena.

The laboratory note-book of a candidate in Experimental Psychology shall be inspected by the Examiner, and if it is found to be unsatisfactory, the candidate shall be disqualified. A note-book which has not been signed at frequent intervals by the Professor under whom the candidate worked shall not be accepted.

GENERAL.

1. A candidate must obtain in order to pass in the Pass Course in—

Mathematics	..	100 *marks*.
Any other subject	..	60 *marks* in the theoretical papers.
		40 *marks* in the practical papers.

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2. A candidate must obtain in order to pass in the Honours Course in—

Mathematics	..	180 *marks*.
Any other subject	..	108 *marks* in the theoretical papers.
		72 *marks* in the practical papers.

3. A candidate must obtain, in order to attain the Honours Standard in—

Mathematics	..	240 *marks*.
Any other subject	..	160 *marks* in the theoretical papers.
		80 *marks* in the practical papers.

4. If a candidate takes up the Pass Course in three subjects, he must, in order to pass the B.Sc Examination, pass in each subject, and obtain 324 marks in the aggregate. If he passes and obtains 450 marks in the aggregate, he shall be declared to have passed with distinction.

5. If a candidate takes up the Pass Course in two subjects, and the Honours Course in one subject, he must, in order to pass the B.Sc. Examination, pass in each subject, and obtain 432 marks in the aggregate. If he passes and also attains the Honours standard in his Honours subject, he shall be declared to have obtained second class Honours in that subject. If he passes, attains the Honours standard in his Honours subject, and obtains 360 marks in that subject, he shall be declared to have obtained first class Honours in such subject.

6. Any candidate who has failed in one subject only, and by not more than 5 per cent. of the full marks in that subject, and has shown merit by gaining 50 per cent. or more in the aggregate of the marks of the examination, shall be allowed to pass. If any such candidate has taken up the Pass Course in three subjects, he shall not be declared to have passed with distinction. But if the candidate has taken up the Pass Course in two subjects and the Honours Course in one subject, and has attained the Honours standard in such subject, he shall be allowed to retain his Honours and his place in the Honours list.

7. If the Examiners are of opinion that in the case of any candidate not covered by the preceding Regulation, consideration ought to be allowed by reason of his high proficiency in a particular subject or in the aggregate, they shall report the case to the Syndicate, and the Syndicate may pass such candidate, or give him Honours, as the case may be.

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CHAPTER XXXVII.

MASTER OF SCIENCE.

1. An examination for the degree of Master of Science shall be held annually in Calcutta, commencing at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar

Any candidate who has passed the B.Sc. Examination not less than two academical years previously may be examined for the degree of M.Sc. in any subject mentioned in Regula ion 5 provided he has prosecuted a regular course of study for two academical years in a College or Colleges affiliated to the University in respect of that subject and standard, or under one or more University Professors or Lecturers in that subject.

Any candidate who has passed the B.Sc. Examination not less than three academical years previously may be admitted as a private student to the M Sc. Examination in Mathematics subject to the provisions of section 19 of the Indian Universities Act.

2. Every candidate shall send in his application with a certificate in the form prescribed by the Syndicate and a fee of Rs. 50 to the Registrar not less than three months before the Examination. If a student desires to appear in the M.Sc. Examination in Experimental Psychology he shall give the Registrar one year's notice of the fact.

3. Any Master of Science may, on payment of a fee of fifty rupees, be admitted to the M.Sc. Examination in any branch other than that in which he was previously examined, provided that if he takes up a subject other than Mathematics, he has prosecuted a regular course of study in that subject for a period of two academical years in a College affiliated to the University in respect of that subject and standard, or under one or more University Professors or Lecturers. He shall, if his attainments come up to the standard prescribed for the degree of M.Sc., be granted a certificate to that effect, stating the subject and class in which he has passed.

4. A candidate who fails to pass, or to present himself for examination, shall not be entitled to claim a refund of the fee. A candidate who fails to pass or present himself may be admitted to any one or more subsequent M.Sc. Examinations on payment of a like fee of fifty rupees on each occasion.

5. A candidate may be examined in any of the following subjects :—

I. Mathematics.
II. Chemistry.

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III. Physics.
IV. Botany.
V. Physiology.
VI. Zoology and Comparative Anatomy.
VII. Geology.
VIII. Experimental Psychology.

6. There shall be a Practical Examination in all subjects other than Mathematics, and candidates shall be required to pass in the practical portion of these subjects as well as in the theoretical portion defined in the Syllabuses.

In Mathematics there shall be eight papers of three hours each, each carrying 100 marks.

In all other subjects there shall be four theoretical papers, and the practical examination shall extend over at least four days. The total marks shall be equally divided between the theoretical and practical portions of the Examination.

7. The limits of the subjects shall be as follows :—

MATHEMATICS.

Candidates in Mathematics shall be examined in either Pure Mathematics or Mixed Mathematics.

The subjects in Pure Mathematics shall be as follows :—

1. Higher Algebra.
2. Higher Plane Trigonometry.
3. Spherical Trigonometry.
4. Theory of Equations and Algebra of Quantics. [Curves.
5. Plane Analytical Geometry, including Higher Plane
6. Geometry of Surfaces.
7. Differential Calculus.
8. Integral Calculus.
9. Differential Equations.
10. Calculus of Variations.
11. One subject to be selected by the candidate from the following group :—

A. Theory of Functions.
B. Theory of Groups.
C. Finite Differences and Calculus of Functions.
D. Vector Analysis and Quarternions.
E. Projective Geometry.
F. Theory of Numbers.

Eight three-hour papers shall be set to be distributed as follows :—

I.—1, 2, 3.
II.—4.

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III.—5.
IV.—6.
V.—7, 8.
VI.—9, 10.
VII and VIII.—11.

The subjects in Mixed Mathematics shall be as follows :—

1. Advanced Statics, including Theory of Potential.
2. Dynamics of a Particle.
3. Rigid Dynamics.
4. Hydrostatics, including Capillarity.
5. Hydrodynamics.
6. Spherical Astronomy.
7. One subject to be selected by the candidate from the fo lowing group :—
   - A. Theory of Elasticity.
   - B. Advanced Dynamics.
   - C. Higher Parts of Spherical Astronomy.
   - D. Lunar and Planetary Theories.
   - E. Figure of the Planets.
   - F. Theory of the Tides.

One three-hour paper shall be set upon each of the Compulsory subjects, and two papers on the additional subject.

A candidate who has taken his B.Sc. Degree with Honours in Mathematics may offer a piece of research work in any portion of the subject he has been studying in lieu of examination in two papers in the remaining portion of the examination. The maximum number of marks assigned to the research work shall be equal to the number assigned to the two papers he would otherwise have taken up.

CHEMISTRY.

Candidates in Chemistry shall be examined in the following :—

(A) Physical Chemistry.
(B) Inorganic Chemistry,
(C) Organic Chemistry.

They will be expected to show a detailed knowledge of any one of these branches and a general knowledge of the other two.

There shall be a Practical Examination comprising qualitative and quantitative analysis; and the preparation of chemical specimens.

Candidates must produce note-books of their laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

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Candidates who have taken their B.Sc. Degree with Honours in Chemistry may offer a piece of research work in the special branch selected by them in lieu of examination in the other two. The maximum number of marks assigned to the research work shall be half the marks assigned to the whole examination.

PHYSICS.

Candidates in Physical Science shall be examined in :—

(A) Electricity and Magnetism,

and in one of the following :—

(B) General Physics and Sound.
(C) Light.
(D) Heat.

Candidates must produce note-books of their Laboratory work which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

Candidates who have taken their B.Sc. Degree with Honours in Physics may offer a piece of research work in Electricity and Magnetism in lieu of examination in another subject. The maximum number of ma ks assigned to the research work shall be half the marks assigned to the whole examination.

BOTANY.

Candidates in Botany shall be examined in : (1) General Morphology, (2) Special Morphology including Classification, (3) Histology, (4) Physiology including Phytodynamics, (5) Distribution of plants in space, (6) Distribution of plants in time and its bearing on the theory of descent.

2. Candidates will be expected to show a detailed knowledge of eithe (1) and (2) or (3) and (4).

3. The Practical Examination shall include (*a*) the making of Microscopic sections of plants or parts of plants including staining and application of microchemical reagents ; (*b*) examination, description and identification of microscopic preparations provided by the Examiners or made by the candidates ; (*c*) examination, description, systematic determination and identification of plants or parts of plant ; (*d*) the performance of physical or chemical experiments, or the setting up and description of apparatus, relating to the phvsiology of pl nts.

Candidates must produce note-books of their Laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

Candidates who have taken their B.Sc. Degree with Honours

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in Botany may offer a piece of research work in the branch which they have selected for special study in lieu of examination in (5) and (6) and the practical work under (*c*). The maximum marks for the research work shall be 200.

PHYSIOLOGY.

The candidate must be prepared to submit himself to a very thorough examination in Physiology. He shall name a particular branch of Physiology which he has made a special study of, and in which the examination will be more searching than in the rest.

The Practical examination shall include—

I. Chemical Physiology.
II. Histology.
III. Experimental Physiology.

The candidate shall name for part of his Practical Examination one of the above subjects in which the test shall be more searching than in the others.

Candidates must produce note-books of their Laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

Candidates who have taken their B.Sc. with Honours in this subject shall be allowed to offer a piece of research work in the branch in which they have specialized in lieu of a portion of the examination in the other part, not carrying more than 200 marks.

ZOOLOGY AND COMPARATIVE ANATOMY.

The candidate must be prepared to submit himself to a thorough examination in Zoology. He shall name a group of animals of which he has made a special study and in respect of which the examination will be more searching than in the rest.

The Practical Examination shall include dissection, microscopical examination and description of types selected out of the group of animals referred to above. The candidate must be prepared to show his practical acquaintance with histological and embryological technique.

Candidates must produce note-books of their Laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

Candidates who have taken their B.Sc. with Honours in this subject shall be allowed to offer a piece of research work in the branch in which they have specialized in lieu of a portion of the examination in the other part not carrying more than 200 marks.

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GEOLOGY.

Candidates who offer themselves for examination in Geology for the M.Sc. Degree may elect to specialize in either—

(*a*) The Mineralogical and Petrological branch, or (*b*) the Stratigraphical and Palæontological branch.

All candidates will be expected to show a knowledge of the History of Geological Science, and to possess an intimate acquaintance with the economic aspects of the branch in which they elect to be examined, with special reference to the mineral deposits of India, their exploitation by indigenous methods in the past, and a knowledge of recent developments.

Candidates must produce note-books of their practical work including field work in which they participated. These must be duly certified by the teacher, and shall be taken into account in estimating their qualifications.

Candidates who have taken their B.Sc. with Honours in this subject shall be allowed to offer a piece of research work in the branch in which they have specialized in lieu of a portion of the examination in the other part, not carrying more than 200 marks.

EXPERIMENTAL PSYCHOLOGY.

1. The examination shall consist of the following parts :—

Theoretical :—

(*a*) Physiological Psychology	*One paper.*
(*b*) Mental Pathology	*One paper.*
(*c*) Animal Psychology, with Mental Evolution in the Animal Kingdom	*One paper.*
(*d*) Child Psychology, with Mental Evolution in the Individual	*One paper.*

Practical :—

Experimental Psychology	*Four days.*

(*i*) Sensation.

(*ii*) Perception, Ideation, Association of Ideas, and Attention.

(*iii*) and (*iv*) Time-relations of Mental phenomena, affective states and their influence on motion.

2. Candidates who have passed the B.Sc. Examination with Honours in Experimental Psychology may offer a piece of research work in (*a*) or (*b*) in lieu of examination in (*c* and (*d*) or a piece of research work in (*c*) or (*d*) in lieu o. examination in (*a*) and *b*).

No candidate shall be excused any portion of the practical examination.

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The maximum number of marks assigned to the research work shall be 200.

3. Candidates must produce note-books of their laboratory work, which shall be duly certified by the Professor, and shall be taken into account in estimating the candidates' qualifications.

GENERAL.

8. (*a*) In order to pass in Mathematics a candidate must obtain 264 marks. No minimum pass marks shall be required in each paper, but if in any paper a candidate obtains less than 20 marks, those marks shall not be included in his aggregate. Candidates obtaining 320 marks shall be placed in the second class and those obtaining 400 marks in the first class.

(*b*) In order to pass in any subject other than Mathematics a candidate must obtain 132 marks in the aggregate of the four theoretical papers and 160 marks in the Practical Examination. If in any theoretical paper a candidate obtains less than 25 marks, these marks shall not be included in his aggregate. Candidates obtaining 360 marks shall be placed in the second class and those obtaining 480 marks in the first class.

9. As soon as possible after the examination the Syndicate shall publish a list of candidates who have passed in each subject, arranged in three classes and in order of merit. Candidates shall be bracketed together unless the Examiners are of opinion that there is clearly a difference in their merits.

Each successful candidate shall receive with his degree of M.A. a certificate setting forth the subject in which he was examined, and the class in which he was placed.

10. The candidate who is placed first in the first class in each branch shall receive a Gold Medal and a prize of books to the value of Rs. 200, and the candidate who is placed second in the first class in each branch shall receive a Silver Medal and a prize of books to the value of Rs. 100.

11. In all cases where a candidate is allowed to substitute a piece of research work for part of the examination the following conditions shall be observed :—

(*a*) He must have completed one year's study including a full course in the subject in which he intends to offer a piece of research work.

(*b*) He must at the end of the year in question submit to the Syndicate an application for permission to offer a piece of research work in lieu of part of the examination.

(*c*) The application shall indicate the particualr piece of

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research which he wishes to take up and must be recommended by the Professor or Professors under whom he has been working.

(*d*) If the application be granted by the Syndicate the research must be carried on under the direction of the Professor or Professors with whom the candidate is prosecuting his studies.

(*e*) The candidate shall draw up a complete report of the particular research work done by him and shall deliver this report to the Registrar at least a month before the first day of the M.Sc. Examination at which he intends to present himself.

(*f*) The Examiner appointed to consider the research work and to apportion marks for the same, shall, if he thinks necessary, subject the candidate to a *viva voce* examination with a view to testing his acquaintance with any previous work that has been done in the particular line of research taken up.

CHAPTER XXXVIII.

DOCTOR OF SCIENCE.

1. Any Master of Science of the University of Calcutta who has been placed in either the first or the second class at the examination for the Degree of Master, may offer himself as a candidate for the Degree of Doctor of Science, provided three years have elapsed from the time when he passed the examination.

2. Every candidate shall state in his application the special subject within the purview of the Regulations for the Degree of Master of Science, upon a knowledge of which he rests his qualification for the Doctorate, and shall, with the application, transmit three copies, printed or typewritten, of a thesis that he has composed treating scientifically some special portion of the subject so stated, embodying the result of research, or showing evidence of his own work, whether based on the discovery of new facts observed by himself or of new relations of facts observed by others, or tending generally to the advancement of Science. The candidate shall indicate generally in a preface to his thesis and specially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others, and the portions of the thesis which he claims as original; he shall further state whether his research has been conducted independently, under advice,

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or in co-operation with others, and, in what respects his investigations appear to him to tend to the advancement of Science.

3. Every candidate may also forward with his application three printed copies of any original contribution or contributions to the advancement of the science professed by him, or any cognate branch of science, which may have been published by him independently or conjointly, and upon which he relies in support of his candidature.

4. No application shall be entertained unless two Members of the Faculty of Science or two Doctors of Science shall have testified, to the satisfaction of the Syndicate, that in habits and character, the candidate is a fit and proper person for the Degree of Doctor.

5. Every candidate shall forward with his application a fee of Rs. 100. No candidate who fails to pass or present himself for examination shall be entitled to claim a refund of the fee.

6. The thesis mentioned in Regulation 2 and the original contributions, if any, mentioned in Regulation 3, shall be referred by the Syndicate to a Board of three examiners.

7. If the thesis is approved by the Board, and, if the candidate has obtained a first class at the examination for the Degree of Master of Science, he shall not be required to submit to any further written examination; but he may be required by the Board, at their discretion, to appear before them to be tested orally, or practically, or by both these methods, with reference to the thesis, and the special subject selected by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the oral and practical examinations, if any; and if the Syndicate upon the report, consider the candidate worthy of the Degree of Doctor of Science, they shall cause his name to be published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of Science.

8. If the candidate is a person who has obtained a second class at the examination for the Degree of Master of Science, and if his thesis is approved by the Board, he shall be required to submit to a written examination.

Two papers of three hours each shall be set, one upon the special subject mentioned in the application of the candidate, and the other upon the subject of the thesis. The candidate may also be required by the Board, at their discretion, to appear before them to be tested orally or practically or by both these methods, with reference to the thesis and the special subject professed by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the written examination, and also of the oral and practical examinations, if any; and if the Syndicate, upon the report, consider the candidate

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worthy of the Degree of Doctor of Science they shall cause his name to be published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of Science.

9. In the case of a candidate falling under the preceding Regulation, if the Board, upon an examination of his thesis and of his original contribution or contributions to the advancement of Science, hold the same to be generally or specifically of such special excellence as to justify the exemption of the candidate from the written examination, he may be exempted by the Syndicate, provided that the report of the Board shall set forth the fact and the grounds of such exemption.

10. A diploma under the seal of the University, and signed by the Vice-Chancellor shall be delivered at the next convocation for conferring degrees to each candidate who has qualified for the degree.

11. Every candidate shall be at liberty to publish his thesis, and the thesis of every successful candidate shall be published by the University, with the inscription: "Thesis approved for the Degree of Doctor of Science in the University of Calcutta."

CHAPTER XXXIX.

LICENTIATE IN TEACHING.

1. An Examination for a Licentiate in Teaching shall be held annually in Calcutta at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any candidate may be admitted to the examination not less than two years after passing the Intermediate Examination in Arts or Science, provided he has attended a regular course of lectures* on the Art and Theory of Teaching in a college or colleges affiliated in Teaching, and has, in addition, (*a*) undergone a course of practical training for a period of six consecutive months at a Training School approved by the Syndicate for the purpose, or (*b*) served as a Teacher at some recognised school for one academical year previously to the examination. The theoretical portion of the course shall consist of the following subjects:—(1) The Theory and Practice of Teaching in relation to Mental and Moral Science, (2) Methods of teaching specific

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* This condition will not be enforced so long as there is no College affiliated for this purpose.

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subjects, and school management, (3) a selected educational classic or classics, and (4) a selected course in modern English, Prose and Poetry.

3. There shall be a written examination in each of the subjects (1), (2), (3) and (4) and a practical examination for testing skill in teaching by means of lessons to be given by the candidate to a class or classes at some recognised school in Calcutta on any three of the following groups of subjects selected by him :—

(i) English.
(ii) A Classical Language.
(iii) History.
(iv) Mathematics.
(v) Geography.
(vi) Elementary Physics and Chemistry.
(vii) Elementary Mechanics.
(viii) Kindergarten and Object Lessons.

4. There shall be one paper in each of the subjects (1), (2), (3) and (4). The Paper on (3) shall include an Essay on an Educational subject carrying 50 marks. Each paper shall be of three hours, and shall carry 100 marks, 300 marks shall be allotted to the practical examination. In order to pass, a candidate must obtain 36 marks in each of the subjects (1), (2) (3) and (4), and 120 marks in the practical examination. Candidates obtaining 420 marks shall be declared to have passed with distinction.

A fee of Rs. 30 shall be payable by every candidate. If the candidate fails to pass or present himself at the examination, he shall not be entitled to claim a refund of the fee.

5. No candidate shall be allowed to appear for the practical examination till he has passed in the theoretical portion. A candidate may present himself for examination in the theoretical portion one year after passing the Intermediate Examination in Arts or Science : and if he passes he may appear in the pra tical portion of the examination in a subsequent year.

6. The limits of the different subjects shall be as follows :—

(I) Theory and Art of Teaching in relation to Mental and Moral Science.

(*a*) General Analysis of Mind ; fundamental processes and activities with their laws and conditions.

(*b*) The physical basis of mental life ; sensation, perception, attention, memory, association of ideas, assimilation of knowledge, feeling and volition ; their associated physical conditions.

(*c*) Mental evolution in the individual—characteristics

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of different ages :—infancy and childhood—the school age, and the succeeding period.

(*d*) The training of the Senses ;—co-ordination of sense and movement.

(*e*) The cultivation of attention and interest—the cultivation of the imagination and the emotions—the æsthetic basis of intellectual education.

(*f*) The Logical basis of education—Logical Method—theory of the five formal steps—abstraction, generalisation and conception—order of the acquisition of knowledge.

(*g*) Language, Imitation and Play as factors in education. Growth of the linguistic faculty.

(*h*) The training and discipline of the emotions—cultivation of Sympathy and the Social Emotions—of the moral sentiment.

(*i*) The training of the will—formation of habits—Rewards and punishments—authority and discipline—the moral standard—the moral idea and moral progress.

(*j*) Characters of individual children—marks of brightness and cleverness—marks of deficiency and abnormality—atavism physical and moral.

(*k*) Tests of visualising power, memory, verbal memory, command of language, sense of number, and the computing capacity, with the conditions of their growth and decline.

(*l*) Educational values and educational ends. Education : classical and scientific, liberal and technical, general and special. Civic education. Co-ordination and sequence of studies. National systems of education : the primary, the secondary, and the University stage.

(II) Methods of teaching specific subjects, and school management.

Methods :

Special :

Training :—Drawing, drill and active songs, gymnastics and games.

Humanistic studies :—General treatment. Mother tongue, Foreign language, Grammar and Composition, Literature, History.

Naturalistic studies :—General treatment. Object lessons. Elementary Scientific lessons. Every day Science. Geography. Arithmetic, Geometry and Algebra. Elementary Mechanics. Elementary Physics and Elementary Chemistry.

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General :—Co-ordination of particular studies. Preparation of teaching notes and lessons. Use of the blackboard. Questioning and conversation. Oral lessons and book-work Excursions.

School Management : Organisation of schools. Co-ordination and sequence of studies. Classification of scholars, various methods of grading pupils. Management of a class. Apportionment of time. The time-table and recreation. Methods of examination. Registers and returns. Progress reports. Promotions and rewards. Corporal punishment in schools. Discipline and the formation of habits. Relations of teachers to pupils out of school hours. Physical exercise. Hygienic conditions. Experimental study of children, and record of results. Attention to individual children. School buildings—their structure, fitting and furniture. Books and apparatus.

(III) English.

Books shall be prescribed from time to time by the Syndicate on the recommendation of the Board of Studies in English. The works shall be of the same standard of difficulty as the B.A. Pass English texts.

CHAPTER XL.

BACHELOR OF TEACHING.

1. An Examination for the Degree of Bachelor of Teaching shall be held annually in Calcutta at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any candidate may be admitted to the examination, not less than one year after passing the B.A. or B.Sc. Examination provided he has attended a regular course of lectures* on the Art, Theory and History of Teaching in a College or Colleges affiliated in Teaching, and has, in addition, either (*a*) undergone a course of practical training consisting of not less than 50 lessons for a period of six consecutive months at a Training School approved by the Syndicate for the purpose, or (*b*) served as a Teacher at some recognised school for one academic year previously to the examination. The theoretical portion of the course shall extend over one academical year, and consist of the following subjects :—(1) The Theory and Practice of Teaching in

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* This condition will not be enforced so long as there is no College affiliated for this purpose.

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relation to Mental and Moral Science, (2) Methods of teaching specific subjects, and school management, (3) the History of Educational Ideas and Methods, and (4) a selected educational classic or classics.

Any candidate who has passed the examination for the Licentiate in Teaching and has also graduated in Arts or in Science may be admitted to this examination without compliance with the conditions laid down in the above paragraph.

3. There shall be a written examination in each of the subjects (1), (2), (3) and (4) and a practical examination for testing skill in teaching by means of lessons to be given by the candidate to a class or classes at some recognised school at Calcutta on three of the following subjects selected by him :—

(i) English.
(ii) A Classical Language.
(iii) History.
(iv) Mathematics.
(v) Geography.
(vi) Elementary Physics and Chemistry.
(vii) Elementary Mechanics.
(viii) Kindergarten and Object Lessons.

4. There shall be one paper in each of the subjects (1), (2), (3) and (4). The Paper on (4) shall include an Essay on an Educational subject, carrying 50 marks. Each paper shall be of three hours, and carry 100 marks. 300 marks shall be allotted to the practical portion of the examination. In order to pass, a candidate must obtain 36 marks in each of the subjects (1), (2) (3) and (4), and 120 marks in the practical examinations. Candidates obtaining 420 marks shall be placed in the First Division.

5. A candidate may present himself for examination in the theoretical portion in one year, and in the practical portion in a subsequent year, but no candidate shall be admitted to the practical examination, who has not passed the written examination. A fee of Rs. 40 shall be payable by every candidate. If the candidate fails to pass or present himself at the examination, he shall not be entitled to claim a refund of the fee.

6. The limits of the different subjects shall be as follows :—

(I) The Theory and Art of teaching. The subjects prescribed for the Licentiate in Teaching treated more fully.
(II) Methods of teaching specific subjects and School Management. The subjects prescribed for the Licentiate in Teaching treated more fully.
(III) History of Educational Ideas and Methods.

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Oriental :—Ancient and Mediæval Hindu education. Mediæval Mahomedan education.

Western :—Greek, Roman and Mediæval education. The Renaissance. The Jesuits and the Jansenists. Revolt from classicism and return to Nature. Scientifie psychology and the Science of education. Child Psychology and Pedagogics.

Outlines of the Organisation and History of National systems of education with special reference to England, Germany, America and Japan.

CHAPTER XLI.

BACHELOR OF LAW.

1. Every candidate for the Degree of Bachelor of Law shall satisfy the following conditions :—

(i) He must have passed the Examination for the Degree of Bachelor of Arts or Bachelor of Science.

(ii) He must, after passing that examination, have prosecuted a regular course of study, as explained in Regulation 2, for not less than two academical years in a college affiliated in Law.

(iii) He must pass two examinations in Law, the Preliminary Examination in Law after one year's course of Law study, and the Final Examination in Law after a two year's course of Law study. Both the examinations shall be held six-monthly, but subject to the exception mentioned in Regulation 9, no candidate shall be admitted to the Final Examination until a year after he passes the Preliminary Examination.

2. No candidate shall be considered to have prosecuted a regular course of study unless he has attended—

(i) at least three-fourths of the full number of lectures in each subject or group of subjects mentioned in Regulation 4 as forming the subject of a separate paper (such full number not being less than 32 ; no candidate being allowed to count attendance at more than one lecture on the same subject or group of subjects on the same day) ;

(ii) at least three-fourths of the full number of sittings of a Moot Court in each of the said subjects or groups of subjects (such full number not being less than 12).

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3. The Preliminary and Final Examinations shall be written and may also be partly oral.

4. The following shall be the subjects for the Preliminary and Final Examinations respectively :—

FOR THE PRELIMINARY EXAMINATION.

(i) Jurisprudence .. .. .. *One paper.*
(ii) Elements of Roman Law and the Principles of Legislation .. .. .. *One paper.*
(iii) Hindu Law .. .. .. *One paper.*

FOR THE FINAL EXAMINATION.

(i) Mahomedan Law and
(ii) The Law relating to Persons .. .. *One paper.*
(iii) The Law relating to Property including—
(*a*) the Law of Land Tenures, Land Revenue and Prescription .. .. .. *One paper.*
(*b*) the Law of Transfer *inter vivos* .. *One paper.*
(*c*) Principles of the English Law of Real Property and the Law of Intestate and Testamentary Succession (exclusive of the Hindu and the Mahomedan Law of Intestate Succession) .. .. *One paper.*
(iv) The Principles of Equity, including the Law of Trusts. *One paper.*
v) The Law of Contracts and Torts .. *One paper.*
(vi) The Law of Evidence and othe general principles of Civil Procedure .. .. *One paper.*
(vii) The Law of Crimes and the general principles of Criminal Procedure .. .. .. *One paper.*

5. The limits of each subject mentioned in the preceding Regulation shall be indicated by the Syndicate from time to time by reference to text-books, and legislative Acts and Statutes where necessary. The Syndicate shall also prescribe, in connection with each subject (other than subjects (i) and (ii) for the Preliminary Examination) a list of leading cases to be studied in original judgments as expositions of important legal principles. Every College affiliated in Law shall make suitable provision for a law library so as to enable its students to have access to the Reports or other books in which the selected cases may be found.

6. A Preliminary Examination and a Final Examination in Law shall be held six-monthly in Calcutta, and in such other places as the Syndicate may from time to time determine, and shall commence at such times as the Syndicate may fix, the approximate dates to be notified in the Calendar.

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7. Any Bachelor of Arts or Science who has, after passing his Degree examination, prosecuted a regular course of study as explained in paragraph 2, so far as the subjects for the Preliminary Examination in Law are concerned, may be admitted to that examination if he sends to the Registrar his application with a fee of Rs. 15 and with a certificate in the Form prescribed by the Syndicate at least thirty days before the date fixed for the commencement of the examination.

A candidate, who fails to pass or present himself for examination, shall not be entitled to obtain a refund of the fee; but he may be admitted to one or more subsequent examinations on payment of a like fee of fifteen rupees.

8. As soon as possible after the Preliminary Examination the Syndicate shall publish a list of the names of the successful candidates arranged in two divisions, each in alphabetical order.

9. A student may, during the first year of his Law study, prosecute a regular course of study as explained in paragraph 2, in the subjects for the Final Examination, notwithstanding that he has not already passed the Preliminary Examination. And no student shall be debarred from prosecuting such regular course of study in the subjects for the Final Examination in the second year of his Law study, by reason of his failing to pass or present himself for the Preliminary Examination at the end of the first year. But no one who is not a Master of Arts or Science shall be admitted to the Final Examination until a year after his passing the Preliminary Examination.

10. Any Bachelor of Arts or Science who has after passing prosecuted a regular course of study as explained in Regulation 2, for two years, and has passed the Preliminary Examination, may be admitted to the Final Examination in Law, if he sends his application with a fee of thirty rupees and with certificates in the form prescribed by the Syndicate to the Registrar at least thirty days before the date fixed for the commencement of the examination.

And any one who has prosecuted a regular course of study as above mentioned, and who as a Master of Arts or Science is entitled under the exception in paragraph 9 to present himself for the Preliminary and Final Examinations in the same year, may be admitted at the same time to the two examinations if he sends his applications with the prescribed fees and with certificates in the prescribed forms to the Registrar at least thirty days before the date fixed for the commencement of the earlier of the two examinations.

A candidate under either of the preceding paragraphs who fails to pass or present himself for examination shall not be entitled to obtain a refund of the fee; but he may be admitted

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to one or more subsequent examinations on payment of the prescribed fee.

11 As soon as possible after the Final Examination the Syndicate shall publish a list of the names of the successful candidates arranged in two divisions, each in order of merit. The first student of the first divsion shall be entitled to a Gold Medal and a prize of books to the value of Rs. 200.

12. If a candidate who is admitted to the Preliminary and Final Examinations at the same time, succeeds in the former and fails in the latter, he shall be declared to have passed the Preliminary Examination, and he may be admitted to any subsequent Final Examination on payment of the prescribed fee. But if he succeeds in the Final Examination and fails in the Preliminary Examination, he shall be deemed to have failed in both, and he may be subsequently admitted to the two examinations at the same time on payment of the prescribed fees.

13. For the Preliminary Examination, three papers shall be set, each of three hours and carrying 100 marks.

For the Final Examination, eight papers shall be set, each of three hours and carrying 100 marks.

14. In the third paper for the Preliminary Examination, and in every paper for the Final Examination, 40 marks shall be allotted to questions framed with a view to test the ability of candidates to apply the more important legal principles to concrete cases. Full credit shall be given for well reasoned answers to such questions, even if the conclusions happen to differ from the views taken in decided cases. No credit shall be given for bare answers unsupported by arguments.

15. In order to pass the Preliminary Examination, a candidate must obtain—

In each paper	30 *marks*
In the aggregate	150 *marks*.
In order to be placed in the first division a candidate must obtain	200 *marks*.

16. In order to pass the Final Examination, a candidate must obtain—

In each paper	30 *marks*.
And in the aggregate	400 *marks*.
In order to be placed in the first division, a candidate must obtain	534 *marks*.

17. Any candidate who has failed in one paper only at either examination, and by not more than 5 marks, and has shown merit by gaining 60 per cent. or more in the aggregate of the marks of the examination, shall be allowed to pass. In order to determine the division in which such a candidate shall be

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placed, and his place in the division, the number of marks by which he has failed in one paper shall be deducted from his aggregate.

If the Examiners are of opinion that in the case of any candidate at either examination not covered by the preceding Regulation, consideration ought to be allowed by reason of his high proficiency in a particular subject or in the aggregate, they shall report the case to the Syndicate, and the Syndicate may pass such candidate.

18. Each successful candidate at the Preliminary Examination shall receive a certificate in the form entered in Appendix A.

Each successful candidate at the Final Examination shall receive with his degree of B.L. a diploma in the form entered in Appendix A, setting forth the division in which he was placed.

CHAPTER XLII.

MASTER OF LAW.

1. An examination for the Degree of Master of Law shall be held annually in Calcutta, commencing at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any candidate who has obtained the Degree of Bachelor of Law may be examined for the Degree of Master of Law.

3. Every candidate shall send his application with a fee of one hundred rupees to the Registrar at least three months before the date fixed for the commencement of the examination. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee.

4. Every candidate shall be examined in the following subjects :—

(1) Hindu Law or Mahomedan Law.
(2) Jurisprudence and Principles of Legislation.
(3) Principles and History of Roman Law.
(4) Private International Law.
(5) and 6) Any two of the following subjects, namely —

(i) Principles of Equity.
(ii) The Law relating to the Transfer of Immovable Property and the Law of Prescription.
(iii) The Law relating to Wills.
(iv) The Law of Contracts and Torts.

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(v) Principles and History of the Law of Real and Personal Property.
(vi) Principles and History of the Law of Evidence.
(vii) History of English Law.

5. Six papers shall be set to each candidate, one on each of the six subjects. Each paper shall be of three hours and shall carry 100 marks.

There shall be a *viva voce* examination of each candidate, if the Examiners think fit.

6. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in two classes, each in order of merit. Candidates shall be bracketed together, unless the Examiners are of opinion that there is clearly a difference in their merits.

7. Each successful candidate shall receive with his Degree of M.L. a diploma in the form entered in Appendix A, setting forth the class in which he was placed. The candidate who is placed first in the first class shall receive a Gold Medal and a prize of books to the value of Rs. 200.

8. In order to pass the examination for the Degree of Master of Law, a candidate must obtain—

In each paper .. .. .. 50 *marks*.

In order to be placed in the first class, a candidate must further obtain—

In the aggregate .. .. .. 400 *marks*.

9. The Examiners shall have regard to the style and method of the answers submitted by the candidates, and shall give credit for excellence in these respects.

CHAPTER XLIII.

DOCTOR OF LAW.

1. Any Master of Law of the University of Calcutta may offer himself as a candidate for the Degree of Doctor of Law, provided one year has elapsed from the time when he passed the examination for the Degree of Master.

2. Every candidate shall state in his application the special subject within the purview of the Regulations for the Degree of Master of Law, upon a knowledge of which he rests his qualification for the Doctorate, and shall, with the application, transmit three copies, printed or typewritten, of a thesis that he

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has composed upon some branch of law, or of the history or philosophy of law. The candidate shall indicate generally in a preface to his thesis and specially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others, and the portions of the thesis which he claims as original; he shall further state whether his research has been conducted independently, under advice, or in co-operation with others, and, in what respects his investigations appear to him to advance the study of law.

3. Every candidate may also forward with his application three printed copies of any original contribution or contributions to the advancement of the science or study of Law whether published conjointly or independently and upon which he relies in support of his candidature.

4. No application shall be entertained unless two members of the Faculty of Law or two Doctors of Law shall have testified, to the satisfaction of the Syndicate, that since graduating as Bachelor of Law, the candidate has practised his profession with repute for five years, and that in habits and character, he is a fit and proper person for the Degree of Doctor.

5. Every candidate shall forward with his application a fee of Rs. 100. No candidate who fails to pass or present himself for examination shall be entitled to claim a refund of the fee.

6. The thesis mentioned in Regulation 2 and the original contributions, if any, mentioned in paragraph 3, shall be referred by the Syndicate to a Board consisting of the Dean of the Faculty of Law and two other persons.

7. If the thesis is approved by the Board, and, if the candidate has obtained a first class at the examination for the Degree of Master of Law, he shall not be required to submit to any further written examination; but he may be required by the Board, at their discretion, to appear before them to be tested orally with reference to the thesis, and the special subject selected by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the oral examination, if any; and if the Syndicate, upon the report, consider the candidate worthy of the Degree of Doctor of Law, they shall cause his name to be published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of the science or study of Law.

8. If the candidate is a person who has obtained a second class at the examination for the Degree of Master of Law, and, if his thesis is approved by the Board, he shall be required to submit to a written examination.

Two papers of three hours each shall be set, one upon the special subject mentioned in the application of the candidate, and the other upon the subject of the thesis. The candidate may also

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be required by the Board, at their discretion, to appear before them to be tested orally with reference to the thesis and the special subject professed by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the written examination, and also of the oral examination, if any; and if the Syndicate, upon the report, consider the candidate worthy of the Degree of Doctor of Law, they shall cause his name to be published, with the subject of his thesis, and the titles of the published contributions (if any) to the advancement of the science or study of Law.

9. In the case of a candidate falling under the preceding Regulation, if the Board, upon an examination of his thesis and of his original contribution or contributions to the advancement of the science or study of Law, hold the same to be generally or specifically of such special excellence as to justify the exemption of the candidate from the written examination, he may be so exempted by the Syndicate, provided that the report of the Board shall set forth the fact and the grounds of such exemption.

10. A diploma under the seal of the University, and signed by the Vice-Chancellor shall be delivered at the next convocation for conferring degrees to each candidate who has qualified for the degree.

11. Every candidate shall be at liberty to publish his thesis, and the thesis of every successful candidate shall be published by the University with the inscription: "Thesis approved for the Degree of Doctor of Law in the University of Calcutta."

CHAPTER XLIV.

PRELIMINARY SCIENTIFIC M.B. EXAMINATION.

1. Any undergraduate of the University may be admitted to this examination provided he has fulfilled the following conditions:—

(*a*) That he has passed the Matriculation Examination, and

(*b*) That he has completed, since passing the Matriculation Examination, a regular course of study, theoretical and practical in the subjects for the examination, for one academical year in a college affiliated to the University for this purpose.

2. The Preliminary Scientific M.B. Examination shall take place once in each year. Every candidate for admission to this examination shall send to the Registrar his application with a certificate in the form prescribed by the Syndicate, and a fee of

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Rs. 10 at least fourteen days before the date fixed for the commencement of the examination. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of ten rupees on each occasion, provided that after three failures he shall not be admitted to the examination except on the special recommendation of the Principal of the College.

3. Every candidate shall be examined in the following subjects :—Inorganic Chemistry, Physics, Botany, and Zoology (one paper in each). The examination shall be written, oral and practical, three hours being allowed for each paper in each subject.

4. As soon as possible after the examination, the Syndicate shall publish a list of successful candidates arranged in alphabetical order. Every candidate shall on passing receive a certificate in the form entered in Appendix A.

5. The course of study for the Preliminary Scientific M.B. Examination shall be—

INORGANIC CHEMISTRY.

Theoretical.

Chemical and Physical changes ; Laws of Chemical action. Indestructibility of matter ; the balance ; weights and measures. Elements and compounds ; Classification of the elements ; Periodic Law. Atoms and molecules ; symbols and formulæ ; valency ; equations, atomic weights ; molecular weights.

Laws of Chemical Combination and Dalton's atomic theory, Avogadro's law.

Calculation of formulæ from percentage composition, and calculations relating to weight and volume.

Study of the following :—

Oxygen ; oxides ; acids, bases and salts ; chemical terminology and Nomenclature ; ozone ; allotropy ; isomerism, metamerism and polymerism.

Hydrogen ; water ; its composition by synthesis and analysis ; impurities of water ; hard and soft water ; elements of water analysis ; mineral water. Peroxide of hydrogen.

Nitrogen ; argon ; atmospheric air ; nitric acid ; oxides of nitrogen ; nitrites and nitrates ; ammonia and ammonium salts.

Carbon ; its oxides ; Relation of CO_2 to animal and plant life ; coal and coal gas ; combustion ; structure of flame ; cyanogen ; hydrocyanic acid ; and metallic cyanides.

Chlorine ; bromine ; iodine ; fluorine ; their compounds with hydrogen and oxygen ; hypochlorites ; hypobromites ; chlorates and iodates.

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Sulphur; its oxides; sulphurous acid, sulphuric acid, hyposulphurous acid, and their salts; carbon di-sulphide.

Phosphorus; oxides and oxy-acids of phosphorus; phosphates; phosphuretted hydrogen.

Boron and silicon; their oxides; boric acid and borax; Silicic acid; dialysis; glass and porcelain.

Occurrence in nature, sources and preparation of the following metals and metalloids and their principal compounds, omitting metallurgical processes: —

Arsenic; antimony; bismuth; tin; platinum; gold; silver; mercury; copper; lead; manganese; chromium; iron; aluminium; zinc; magnesium; calcium; strontium; barium; lithium; sodium; potassium. Special attention will be paid to the general properties and reactions of compounds of medicinal and medico-legal importance and their methods of detection.

During the above course, the common laboratory processes such as *mixture*, *solu ion*, *crystallisation*, *dissociation*, *distillation*, *electrolysis*, *evaporation*, *precipitation*, *filtration*, *decantation* (syphon), *desiccation*, *decomposition*, *separation*, *oxidation*, *reduction*, and *neutralisation*, will be demonstrated.

Practical.

Fitting up of simple apparatus.

Use of burettes, pipettes, etc.

Use of the chemical balance.

Performance of experiments involving solution, filtration, distillation, crystallisation, oxidation and reduction.

Determination of the water of crystallisation of hydrated salts.

Preparation and study of the principal properties of hydrogen, oxygen, nitric acid, ammonia, carbon dioxide, hydrochloric acid, chlorine, sulphur dioxide, sulphuretted hydrogen.

Experiments showing the composition of water by electrolysis and of air by burning phosphorus.

Qualitative analysis of a simple salt containing one basic and one inorganic acid radicle.

Detection of common impurities in chemicals, such as chlorine in hydrochloric acid; oxides of nitrogen in nitric acid; lead in sulphuric acid; arsenic in medicinal salt; iodine in potassium iodide; mercuric chloride in mercurous chloride, etc.

Alkalimetry and acidimetry (standardised solutions will be provided).

Candidates must produce note-books of their laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

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PHYSICS.

Theoretical.

States of matter.

General properties of solids, liquids and gases.

Units of measurement and definition of mass, force, motion.

Velocity; acceleration; composition of velocities.

Laws of motion.

Measurement of force. Parallelogram of forces; composition and resolution of uniplanar forces acting at a point.

Moment of a force; Levers and simple pulleys.

Centrifugal and centripetal forces.

Gravitation; weight; centre of gravity.

Laws of falling bodies.

The Pendulum.

Work and Energy; Conservation of Energy.

Elementary ideas of wave-motion.

Laws of pressure of liquids and gases.

Measurement of pressure.

Principle of Archimedes; equilibrium of floating bodies.

Specific gravity and its determination; hydrometer, urinometer, lactometer.

Physical properties of gases—Relation of volume to temperature and pressure—Dalton's or Charles' Law—Boyle's Law; Calculations of volumes from weights; Reduction to normal temperature and pressure (N. T. P.)

Gay-Lussac's law.

Diffusion, liquefaction and solidification of gases.

Atmospheric pressure—Barometers; air-pumps; syphons.

Sound—

The production and propagation of sound; velocity of sound in air.

Reflection and refraction of sound.

Relation between frequency and pitch.

Vibration of strings; sonometer.

Vibration of the air columns; organpipes.

Human voice; the ear.

The stethoscope; the air-trumpet.

Heat—

Laws of expansion of solids, liquids and gases.

Temperature.

Measurement of temperatures; thermometers; the clinical thermometer; the maximum and minimum thermometers.

Radiation, conduction and convection.

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Reflection and absorption.

Vapour pressure; boiling point; dewpoint; hygrometers; formation of clouds, rain, fog, dew, etc.

Changes of state; pecific heat and latent heat; calorimetey; sources of heat.

Light—

Sources of light.

Propagation of light.

Shadows; photometer.

Reflection and refraction of light.

Mirrors; prisms; lenses; chromatic dispersion.

Spectrum; spectroscope; colours.

Optical instruments; the microscope; the telescope; the photographic camera; the eye; mechanism of vision; short and long sight.

Magnetism and Electricity—

Properties of magnets; magnetic induction.

Methods of magnetisation.

Magnetic field.

The earth as a magnet; mariner's compass.

Electricity by friction.

Positive and negative electricity.

Laws of electrical attraction and repulsion.

Conductors and non-conductors; insulation; electrical induction; electroscopes.

Electrostatic machines; electrophorus.

Potential; capacity; quantity.

Condensers; the Leyden jar.

Effects of electricity.

Atmospheric electricity; lightning conductors.

Voltaic cell; electric current.

Batteries.

Effects of dynamical electricity; galvanometers.

Electromotive force; potential; resistance.

Ohm's law; volt, ohm; ampere.

Electro magnets.

Induced currents; Ruhmkorff's coil.

Mutual forces between currents and magnets and between currents and currents.

Röntgen Rays.

Medical batteries.

Practical Course.

Length measurements; use of vernier.

Determination of the specific gravity of solids and liquids

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including the use of the hydrostatic balance, hydrometers and specific gravity bottles.

Determination of the focal length of a convex lens.

Construction of a common battery.

Use of the following appar tus :—

Syphon ; thermometers ; dry and wet bulb thermometer ; Daniel's hygrometer ; barometers ; microscope ; simple mirrors and lenses ; spectroscope ; gold-leaf electroscope ; electrophorus ; simple induction coil ; magnet ; magneto-electric machine.

Candidates must produce note-books of their Laboratory work which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

The whole subject will be treated in an elementary manner.

BOTANY.

Theoretical.

The elementary differences and resemblances between plants and animals—Life-histories of selected types of uni-cellular and multi-cellular plants—Yeast—Chroococcus—Cosmarium—Mucor—Spirogyra—Ulothrix—Vaucheria—Peronospora—Moss—Fern—Selaginella—Gymnosperm—Angiosperm.

General morphology of flowering plants.—*The root* : —Characters—Forms—Consistence—Branch roots—Adventitious roots—Metamorphosis of roots—Roots of epiphytes—Parasites—Saprophytes—Mycorhiza—Uses of roots to man.

The stem.—Characters—Forms—Duration—Buds—Modes of Branching—Regions of stem—Microscopic structure in mosses, ferns, monocotyledons, conifers, dicotyledons—Metamorphosis of stems—Uses of stems to man.

The leaf.—Characters—Phyllotaxy—Prefoliation—Leaf sheath—Leaf-stalk—Leaf-blade—Compound leaves—Heterophylly—Modifications of leaves—Uses of Leaves to man—Stipules and their modifications—Hairs and their modifications—Prickles—Stings.

The flower.—Essential and accessory organs—Bracts and their special forms—Inflorescence : Indefinite, definite, mixed—The typical flower—Modes of deviation from the perfect type.

The perianth.—Number of part—Prefloration——Calyx—Corolla and modifications—Androecium—Gynœcium—Nectaries—Pollination and fertilisation of ovules.

The fruit—Its morphology—Classification of fruits. *Seed* : its morphology and modes of distribution.

Classification of flowering plants.—General printing principles of classification—Species—Hybrids—Genera—Orders—Classes—Nomenclature—Modes of describing plants—Eight natural orders (to be notified by the Syndicate from time to time).

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Microscopic anatomy of flowering plants : *The cell.*—Protoplasm —Test for protoplasm—Nucleus—Cell-wall—Cell-contents—Plastids—Reserve Proteids—Starch—Mineral deposits—Substances in cellsap—Fats, oils, etc.—Nutrition of cell —Formation of new cells—Modification of cells—Tissues—Origin of tissues—Laticiferous vessels—Glands—Resin-passages—Air-passages —Tissues in Thallogens, Vascular Cryptogams and Phanerogams—Development of embryo of vascular plants and of i's tissue-systems.

The root.—Development and microstructure from tip backwards—Development of lateral roots—Secondary changes in roots—Fleshy roots—Uses of each of the tissues of roots to plants—Process of movement of roots.

The stem.—Development and microstructure—Primary structures of stems—Secondary structures of stems—Modification in subterranean and in metamorphosed stems—Microscopic peculiarities of stems of Conifers, Ferns, Lycopods, and Selaginella—Mechanical uses of tissues.

The leaf.—Origin—Structure of leaf-blade leaf-sheath, and leaf-stalk,—the pulvinus, its structures and function—Phyllode —Structure of anomalous and metamorphosed leaves—Fall of leaf—Glands and nectaries on leaves—Bud-scales and stipules

Reproductive organs of Phanerogams—Microstucture and development of members of flower-bud—Perianth—Stamens —Carpels—Ovules—Fruits—Seeds.

Nutrition and growth in ordinary green plants and their peculiarities in other plants—Chemical elements in plants—How to ascertain the composition of plants—Physiological classification of tissues, protective, nutritive, reproductive. Food of green land plants—Ascent and movements of sap—Elaboration of the sap—Assimilation and Metastasis—Phenomena of growth —Temperature and light in relation to plant life—Movements in plants.

Reproduction.—Asexual or vegetative—Sexual—alternation of generations —Deviations from the normal cycle of reproduct on.

Elementary facts of Plant-Geography.

Practical.

Candidates must be prepared to examine microscopically, to dissect and to describe specimens or parts of the selected types of plants in the foregoing syllabus.

Candidates must produce note-books of their Laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

The whole subject will be treated in an elementary manner.

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ZOOLOGY.

Theoretical.

The bearing of Zoology on Human Anatomy, Physiology and Pathology, and on certain aspects of sanitation.

The nature of living matter. The contrast between the Animal and the Plant.

The history of the cell-theory. The architecture of the cell and of the resting nucleus. The phenomena and meaning of Karyokinesis. The "reducing division" of the nucleus and its meaning in heredity.

The morphology and life-history of *Amœba*, *Euglena*, *Paramœcium*, and *Monocystis*. Conjugation and its meaning. Sexual reproduction in Protozoa.

Sporozoan parasites: their life-cycle and their pathological importance.

General consideration of the Metazoa: the germ plasm and the Soma. The origin, development, and structure of the ovum and sperm-cell. Amphimixis and its meaning. Segmentation of the ovum. The germinal layers and their derivatives. Embryological and physiological classification of the tissues.

The parazoa or sponges: their structure, mode of life and bionomic importance.

Structure and development of *Hydra*: the Ectoderm and Endoderm Non-sexual reproduction: hydraform corms or colonies. "Physiological Division of Labour"; differentiation. Medusæ and metagenesis.

Structure of the Anthozoa (*e.g.*, *Sphenopus*). The stomodæum and its potentialities. Importance of the Cœlenterates as builders of the earth's crust.

The Cœlomata in general. Origin and function of the cœlom. Orientation of the body.

Structure and mode of life of *Bipalium*. Structure and life-history of the common liver-fluke and tapeworm The Platyhelminths in their pathological and insanitary aspects.

Structure and mode of life of the common intestinal roundworm. The Nemathelminths in their pathological and insanitary aspects.

Structure of a Sea worm (*e g.*, *Eunice*). The trochosphere larva. Structure of the Earthworm. Worms as soil-makers. Peculiarities of structure of the Leech.

General characters of the Molluscan phylum as exhibited in a land-snail or pond-snail, and in a pond-bivalve. The Veliger larva and its meaning.

Structure and mode of life of a starfish. Modifications of

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the water vascular system in the Echinoderm phylum. The *Pluteus* larva.

Structure of either the marine prawn *Peneus*, or the freshwater prawn *Palæmon*. Post-embryonic metamorphoses of *Crustacea*. Examination of the external characters of Scorpion, Spider, Centipede and Locust. Details of structure of Cockroach. Post-embryonic metamorphoses of Insects. Parthenogenesis and its meaning. Instincts of Insects. Social Insects. Protective devices of Insects. Insects as fertilizers of flowers and as carriers of infection. Insects of therapeutic importance. Arthropods as Scavengers.

Characters of the *Chordata*. Origin, relations and history of the notochord. Primitive Chordates and the Ancestry of the phylum. Comparison of *Ascidia* and *Amphioxus*.

General consideration of the vertebrate skeleton. Structure and composition of the vertebrate skull followed in Shark, Sea-perch (or other convenient Teleostean , Frog, Crocodile Python, Bird and Tiger.

General consideration of the integument, brain and sense organs, organs of nutrition, circulation, excretion and reproduction in the vertebrata, followed in the sea-perch (or other convenient Teleostean) Frog, Lizard, Fowl and Mammal.

General consideration of the orders of fishes, with special reference to the modifications exhibited in the skeleton, intestin, breathing-organs, heart, genital ducts, and methods of reproduction.

Study of the Tadpole and Frog with special reference to the post-embryonic changes in the breathing-organs and blood-vascular system. Comparison of Frog with certain types of Fishes.

General consideration of the orders of Reptiles, with special regard to the integument, skeleton, dentition, heart and great blood-vessels. Peculiarities of structure of the snake (*Tropidonotus*). The poison-apparatus of the Cobra and Viper: their mechanism and homologies. Nature and mode of action of snake-venom: chemical antidotes to snake-venom: theory of anti-venines.

General consideration of the skeleton, special muscular mechanisms, integument, digestive system, tracheal and pneumonic system, heart and great blood-vessels of the bird. Secondary sexual characters in birds. Structure of the birds' egg. Incubation and parental instincts. Development of chick: the amnion and allantois. Comparison of bird and reptile: some extinct birds and reptiles.

Evolution and descent of Mammalia. Peculiar characters of Monotremes and Marsupials as exhibited in the skeleton and reproductive organs.

Dentition of *Eutheria*. Homologies of epidermal derivatives

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of Mammals. Structure of the placenta, and modes of placentation: peculiarities of the embryonic circulation.

The orders of Mammalia, considered with regard to external and internal adaptations to environment and modifications of the appendicular skeleton.

The genera of *Primates* and their geographical distribution. Fossil and subfossi remains of Man.

The genus *Homo* and its place in Nature. The Races of Man.

Station and Habitat of animals. Geographical Distribution of animals and its meaning. The Geological succession of animals.

Rate of increase of animals. Natural checks and limitations, and the struggle for existence. Variation of individuals. The theory of Evolution.

Practical Course.

Each candidate must be prepared to examine microscopically, to dissect and to describe specimens or parts of the selected types of animals in the foregoing syllabus.

Candidates must produce note-books of their Laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

The whole subject will be treated in an elementary manner.

6. Exemptions may be granted in respect of the Preliminary Scientific M.B. Examination as follows:—

(i) Any candidate who, in the Intermediate Examination in Arts or Science, has passed in one or more of the following subjects, namely, Chemistry, Physics, Botany, Zoology, shall be excused attendance at ectures and the practical work, and also the theoretical portion of the examination in the corresponding subject. No such candidate shall, however, be excused the oral and practical portion of the examination in any subject.

(ii) Bachelors of Science who have passed in Physics, Chemistry, Botany or Zoology at the B.Sc. Examination shall be excused attendance at lectures and the practical work, and also the theoretical, oral and practical examination in the subject in which they have already passed.

7. The full marks for each subject and the minimum marks required for passing shall be as follows:—

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	Written.	Oral.	Practical.	Total marks.	Passing marks.	Passing marks in Practical.
Chemistry ..	400	50	150	600	200	50
Physics ..	200	50	50	300	100	17
Botany ..	200	100	100	400	134	34
Zoology ..	200	100	100	400	134	34

CHAPTER XLV.

FIRST M.B. EXAMINATION.

1. Any undergraduate of the University who has fulfilled the following conditions may be admitted to the examination :—

(*a*) that he has passed the Preliminary Scientific Examination at least two years previously,

(*b*) that he has attended a regular course of study theoretical and practical in the subjects of the examination for not less than two years at a College of Medicine affiliated to the University up to the standard of the First M.B. Examination.

Any candidate who has passed the Intermediate Examination in Science shall be permitted to present himself at the Preliminary Scientific M.B. Examination at the same time as he presents himself at the First M.B. Examination, or at any previus examination for the Preliminary Scientific M.B. The provisions of Regulation 6 of Chapter XLIV shall apply to such candidates.

2. The First M.B. Examination shall be held once in each year and shall commence at such time as the Syndicate shall determine. Every candidate for admission to the examination shall send to the Registrar his application, with a certificate in the form prescribed by the Syndicate and a fee of Rs. 15, at least fourteen days before the date fixed for the commencement of the examination, mentioning at the same time the subject or subjects, if any, in which he desires to take up Honours. If a candidate takes up Honours he shall pay an additional fee of Rs. 30. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the

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fee, but may be admitted to one or more subsequent examinations on payment of the prescribed fee on each occasion, on producing a certificate that he has, since the date of the last examination, attended a regular course of study in the subject or subjects in which he last failed at that examination, provided that after three failures he shall not be admitted to the examination except on the special recommendation of the Principal.

3. Every candidate shall be examined in the following subjects :—Anatomy, Physiology, Pharmacology including Pharmacy, Materia Medica and Therapeutics and Organic Chemistry (with special reference to organic compounds in the British Pharmacopœia).

The examination shall be written, oral and practical. Three hours shall be allowed for each paper in each subject.

The examination in Anatomy shall consist of—

(*a*) One theoretical paper.
(*b*) Dissection.
(*c*) An oral examination.

The examination in Physiology shall consist of—

(*a*) One theoretical paper.
(*b*) A practical examination.
(*c*) An oral examination.

The examination in Pharmacology, including Pharmacy and Materia Medica, shall consist of—

(*a*) One theoretical paper.
(*b*) An examination in Practical Pharmacy.
(*c*) An ora examination, which may include the recognition of the more important substances in the British Pharmacopœia.

The examination in Organic Chemistry shall consist of—

(*a*) One theoretical paper.
(*b*) A practical examination within the scope of the Syllabus.
(*c*) An oral examination.

4. In all subjects other than Organic Chemistry the candidate may be examined for Honours as well as Pass.

5. The scope of the examination for Honours in each subject shall be wider than that required for the Pass Examination, an extra paper being given for each subject, and the candidate shall have to undergo a further and more searching oral and practical examination. The examination will not necessarily be confined to the Syllabus, if any, prescribed in that subject.

No student shall be considered eligible for Honours who has not acquitted himself satisfactorily in the Pass Examination.

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6. As soon as possible after the examination, the Syndicate shall publish a list of candidates who have passed together with a list of those who have obtained Honours in any subject, arranged in order of merit.

On the recommendation of the Examiners a Gold Medal may be awarded to the candidate who has most distinguished himself in Honours in any branch of the examination.

7. The Course of study for the First M.B. Examination shall be as follows —

ANATOMY.

The curriculum in Anatomy shall consist of (1) a complete course on Human Anatomy, (2) a course of dissections extending over two winter sessions.

PHYSIOLOGY.

The curriculum in Physiology shall consist of (1) a theoretical course of lectures on Physiology, (2) a practical course of experimental Physiology extending over not less than three months, (3) a practical course of normal Histology extending over not less than three months, (4) a course of elementary Physiological Chemistry (including practical exercises) extending over not less than three months.

The General Histology of the animal cell, Epithelial and connective Tissues, Histology and Physiology of the Contractile Tissues, Blood and Lymph: the circulation of the Blood and Lymph embracing the mechanism of the circulation of the blood and of the movements of the Lymph.

The Innervation and Nutrition of the Heart and the Innervation of the Blood vessels.

The Histology of the organs of Respiration and the Physiology of Respiration including the Chemistry thereof.

The general chemical composition of the Body; the Chemistry of Digestion and Nutrition; the Physiology of Absorption; Excretion and Metabolism; Animal Heat; Ductless Glands; Internal Section. The Structure, Development and Functions of the central Nervous System and Organs of the special Senses. Reproduction and Development.

Experimental physiology.

A practical knowledge of the working of the more important physiological instruments including a knowledge of the chief experiments illustrating the functions of the organs and tissues of the body and the methods made use of in recording the results obtained in a graphic manner.

The course shall include—

I. Muscle nerve preparation—results of stimulation by different forms of stimuli—action of interrupted and constant current

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—Tetanus—Muscle sound—Fatigue—Work done—Influence of Temperature, Load, Drugs. Elasticity and Extensibility of muscle—Electrotonus—Reaction of Degeneration, etc.

II. Frog's Heart—

Graphic record of beat—Stannius' experiment—Gaskell's clamp—Latent Period of Heart—Action of heat, cold and constant current—Innervation. Endocardial Pressure—Action of Drugs on Frog's Heart.

III. Mammalian Heart.

Its Nutrition, Perfusion experiments. Cardiac Impulse—Sounds—Cardiograph—Action of Drugs, etc.

IV. Blood Vessels.

Pulse—Sphygmographic tracings. Sphygmoscope. Blood-pressure and methods of measuring it.

Stromuhr—Kymograph—Manometers, etc., clinical methods as by Hill's sphygmometer, Plethysmographs, etc.

V. Lungs—Vital capacity—Elasticity of Lungs, Pneumograph. Laryngoscope, etc.

VI. Reflex action—knee-jerk, action of Poisons on nervous system.

VII. Eye—Accommodation—Phakoscope—Astigmatism and Defects. Phosphenes, Retinal shadows—Perimetry. Colour vision—Colour Blindness—Contrast. Stereoscope, Ophthalmoscope, etc.

VIII. Cutaneous Sensations—Cold, Hot, Pressure and Pain Spots—Muscular Sense—Resistance, etc

IX. Taste, Smell, Hearing—Stereognostic Sense, etc.

Normal Histology.

Methods of preparation of the different tissues of the Body for Histological purposes—

(1) Hardening, Embedding, Section-cutting, Staining and Mounting.

(2) Histology of the Blood.
Enumeration of red and white blood corpuscles. Differential Count of the white blood corpuscles, crystals of Hæmoglobin.

(3) Recognition of sections of the different tissues of the Body.

Chemical Physiology—

(1) General chemical Reactions and composition of Carbohydrates, Fats, Proteids and allied substances.

(2) Chemical Composition of Animal and Vegetable Food stuffs.

(3) Chemistry of Digestion.
Action of Saliva, Gastric juice, Succus Entericus and Bacterial Digestion.

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(4) The Liver and Products of its activity.
(5) The blood.
Estimation of alkalinity and gases of blood. Coagulation time, Estimation of Hæmoglobin. Spectroscopic Examination of blood pigments. Detection of blood stains.
(6) Chemistry of Urine.
Normal and Pathological Urine-Testing and Sediments. Estimation of quantity of Blood, Uric acid, Urea, Sugar, Chlorides, Phosphates; Total Nitrogen. Pigments of Urine—Polarimeter—Amount of Albumen, Albumoses, etc.
(7) Chemistry of Gastric Juice. Estimation of acidity. Tests for Hydrochloric acid, Lactic acid, Butyric acid.
(8) Cryoscopy, Osmosis and Osmotic Pressure. Analysis of gases of expired air.

At the Practical Examination, students will be expected to show knowledge of the following subjects :—

(*i*) In normal Histology, including a knowledge of preparation of tissues for microscopic examination. Fixing, hardening, embedding, sectioncutting, staining, clearing, mounting and recognition of specimens.

Enumeration of red and white blood corpuscles.

Differential enumeration of white blood-corpuscles.

(*ii*) In Physiological Chemistry, including a practical knowledge of the Coagulation and alkalinity of the blood.

Estimation of Hæmoglobin of the blood.

Chemical composition and tests for—

Carbohydrates and fats.
Proteids.
Principal food-stuffs.
Saliva.

Peptic and pancreatic digestion, and analysis of digestive juices HCl, inferior, *viz.*, lactic acid, etc.

Bile, blood, milk, urine. Quantitative examination of albumen, sugar, urea and chlorides in urine.

Pigments.

The use of simple spectroscope and saccharimeter.

(*iii*) In experimental Physiology including a knowledge of and the uses of the more important physiological apparatus.

Physiological experiments illustrating the function of—

(1) Nerve and muscle.
Single contraction, Tetanus, Excitability, Fatigue, etc. Modifications of contractions under different

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conditions. The graphic method to be made use of.

)2) Experiments on frog's heart.
Stannius' experiment, action of heat and cold.
Cardiograph action of drugs on heart's beat.

(3) Method of using the different forms of Sphygmographs :—
Marey's, Dudgeon's, Jacquet's.
Tracings to be made.

(4) Estimation of the blood pressure in different parts of body.
Use of Hill and Barnard Sphygmometers and Oliver's Hæmo-Dynamometer.

(5) The nervous regulation of Respiration.
The Stethometer and Pneumograph.

(6) Reflex action.

(7) Experimental Physiology of Eye. Accommodation, Colour Sense, Perimetry.

Candidates must produce note-books of their Laboratory work which must be duly certified by the Professor, and shall be taken into account in estimating their qualifications.

PHARMACOLOGY, INCLUDING PHARMACY AND MATERIA MEDICA.

The curriculum shall consist of a theoretical course of lectures and a course of instruction in practical pharmacy extending over not less than two months including practical knowledge of the preparation of medicines and of the constituents of the more important compounds of the British Pharmacopœia as also prescription writing.

The systematic course of lectures will deal briefly with the natural history, and the sensible and chemical properties of all drugs and medicinal agents mentioned in the British Pharmacopœia, and will also include full account of their pharmacological action upon the chief functions of the body, *viz.*, Circulation, Respiration, Digestion, Absorption, Secretion, and Excretion, Metabolism, Heat regulation, Motor, Sensory and Reflex Mechanism, and the chemical transformations undergone in the body by the principal medicinal substances. The Therapeutic uses and modes of administration of the official drugs and medicinal agents will be al o included in the lectures, and as far as time and opportunity allow, reference will also be made to the most important of the more recently introduced drugs and their probable mode of action explained as far as is known.

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ORGANIC CHEMISTRY.

Theoretical.

Analysis of organic compounds, Estimation of C, H, N, S, P and the halogens.

Empirical and molecular formulæ.

Determination of molecular weights.

Determination of melting and boiling points.

Fractional distillation.

Students will be expected to know the general properties of the following groups of compounds, illustrated in each case by reference to a few of their more important members :—

Aliphatic series :—

Paraffins (methane and ethane).

Unsaturated hydrocarbons (ethylene and acetylene).

Alcohols and their derivatives (methyl alcohol, ethyl alcohol and glycerol).

Aldehydes (formaldehyde and chloral hydrate).

Ketones (acetone).

Acids (formic, acetic, lactic, oxalic, tartaric and citric).

Ethyl Ether.

Esters (saponification).

Carbohydrates. Sugars (glucose, lactose, maltose, and cane sugar) ; starches ; glucosides.

Cyanides ; urea ; uric acid.

Aromatic Series :—

Benzene and its simple derivatives.

Phenols (Phenol and resorcinol).

Acids, Benzoic and Salicylic.

Vegetable alkaloids.

Practical.

Test for the following elements in organic compounds :—

Carbon, hydrogen, nitrogen, sulphur, phosphorus and chlorine.

Tests for and reactions of ethyl alcohol Preparation of chloroform and iodoform ethyl alcohol.

Preparation of fatty acids from a fat.

Preparation of a salt from an organic base or of a base from one of its salts, *e.g.*, quinine sulphate and *vice versâ*).

Recognition of important alkaloids by ordinary tests.

Test for urea. Test for gluco e and cane sugar.

Tests for phenol and salicylic acid.

The more important tests for acetic, oxalic, tartaric and citric acids.

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Analysis of urine and urinary calculi.

Candidates must produce note-books of their laboratory work, which must be duly certified by the Professor, and shall be taken into account in estimating their qualification.

The whole subject will be treated in an elementary manner.

8. The full marks for each subject and the minimum marks required for passing shall be as follows :—

	Written.	Oral.	Practical.	Total marks.	Passing marks.	Passing marks in Practical.
Anatomy ..	600	200	200	1,000	500	100
Physiology ..	600	200	200	1,000	500	100
Pharmacology, etc.	600	200	200	1,000	500	100
Organic Chemistry	200	50	50	300	100	17

In order to obtain Honours in any branch, candidates must obtain one-half of the marks allotted to each portion of the examination, written, oral and practical, and two-thirds in the aggregate.

CHAPTER XLVI.

FINAL M.B. EXAMINATION.

1. Any candidate who fulfils the following conditions may be admitted to this examination: —

(*a*) That he has passed the First M.B. Examination at least three academic years previously.

(*b*) That he has subsequently to passing the First M.B. Examination, completed a regular course of study, theoretical and practical, in the subjects of the examination in a College of Medicine affiliated to the University, up to the standard of the Final M.B. Examination.

2. The Final M.B. Examination shall be divided into two parts —Part I and Part II, embracing the Major and Minor subjects, respectively, as defined below. The examination in the Major subjects, that is, Part I, shall take place once a year, while that in the Minor subjects, that is, Part II, shall take place twice each year. A candidate may either take up

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both parts together, or one part only, either Part I or Part II, at that time, leaving the other for a subsequent examination.

3. Every candidate for admission to the examination shall send to the Registrar his application, with a certificate in the form prescribed by the Syndicate at least fourteen days before the date fixed for the commencement of the examination mentioning at the same time the subject or subjects (if any) in which he desires to take up Honours.

4. A fee of thirty rupees shall be payable by each candidate taking up the two parts of the examination together, but if Part I and Part II be taken separately, the fee for each Part shall be Rs. 20. A candidate who takes up Honours in any subject shall pay an additional fee of Rs. 30. A candidate, who fails to pass or present himself for examination, shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of the prescribed fee on each occasion, provided he produces a certificate of regular study in the subject or subjects in which he is to be re-examined, and this study must have been pursued not only since the date of his failure but within the twelve months preceding his re-examination.

5. A candidate, who fails in not more than two subjects of Part II of the Final M.B. Examination, may be re-examined in the subject or subjects in which he failed within six months from the date of failure.

6. Part I of the Final M.B. Examination must be passed as a whole.

7. Every candidate shall be examined in the following subjects :—

Major Subjects, Part I.	1.	Medicine (including Therapeutics, special Pathology and Mental Diseases).
	2.	Surgery including Ophthalmology.
	3.	Midwifery and Gynæcology.
Minor Subjects, Part II.	4.	General Pathology (including Bacteriology and Parasitology).
	5.	Medical Jurisprudence.
	6.	Hygiene.

The examination in Medicine shall consist of—

(*a*) Two theoretical papers.
(*b*) A clinical examination of a patient and written report thereon.
(*c*) An oral examination.

The examination in Surgery shall consist of—

(*a*) Two theoretical papers.
(*b*) A clinical examination on cases.

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(*c*) An oral examination in which questions on the use of surgical instruments and appliances, on the application of splints and bandages and on museum specimens illustrating Surgical Pathology shall form a special part.

(*d*) Operations on the dead body.

The examination in Midwifery and Gynæcology shall consist of—

(*a*) One theoretical paper.

(*b*) An oral examination including questions on specimens, instruments and appliances.

(*c*) Obstetric operations on the manikin.

The examination in General Pathology shall consist of—

(*a*) One theoretical paper.

(*b*) A practical examination within the scope of the Syllabus.

(*c*) An oral examination including questions on museum specimens.

The examination in Medical Jurisprudence shall consist of—

(*a*) One theoretical paper.

(*b*) An oral examination.

(*c*) A practical examination to include examination on the dead body on points of medico-legal importance as arising out of, or as illustrated by, the conditions observable on the dead body, the actual methods of post-mortem examination for medico-legal purposes, the putting up of materials for medico-legal-chemical analysis and the writing of medico-legal post-mortem reports.

The examination in Hygiene shall consist of—

(*a*) One theoretical paper.

(*b*) An oral examination.

8 In every subject other than Hygiene a candidate may be examined for Honours as well as for Pass.

The scope of the examination for Honours in each subject shall be wider than that required for the Pass Examination, an extra paper being given in each subject; and the candidate shall have to undergo a further and more searching oral and practical examination. The examination will not necessarily be confined to the Syllabus, if any, prescribed in that subject.

No student shall be considered eligible for Honours who has not acquitted himself satisfactorily in the Pass Examination.

9. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged

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in alphabetical order, and of those who have taken Honours in any branch, arranged in order of merit.

Every candidate on passing shall receive a diploma in the form given in Appendix A. On the recommendation of the examiners a Gold Medal may be awarded to the candidate who has most distinguished himself in Honours in any branch of the examination.

10. The course of study shall be as follows :—

MEDICINE.

(1) A course of lectures on the principles and practice of Medicine.

(2) A course of not less than twenty demonstrations on Clinical methods, Physical Diagnosis and the use of instruments of observation used in Medicine.

(3) Attendance upon the medical practice of a recognised hospital for three years, with clinical instruction and lectures in clinical medicine and experience as clinical clerk for twelve months during this period (with a careful record of at least six medical cases which the candidate may be required to produce before the examiners).

(4) A course of lectures on Mental Diseases with clinical demonstrations at a recognised Asylum for a period of one month.

Mental constitution. Mental character, Mental health.

Sleep—Insomnia and its treatment.

The examination of Mental cases.

Diagnostic characters of insanity.

Causation—Prognosis—General Principles of treatment.

Melancholia, Katatonia, Catalepsy, Partial Insanity, Chronic. Progressive delusional Insanity, Mania.

Dementia, Moral Insanity, General Paralysis of the Insane

Epileptic Insanity, Inebriety, Concomitant Insanities, Alcoholic Insanity, Puerperal and allied insanities.

Idiocy and imbecility. The backward and feeble-minded

The legal and civil aspects of Mental Disease.

(5) Three months of attendance at the Medical Outdoor Dispensary of a recognised hospital.

SURGERY.

(1) A course of lectures on the principles and practice of Surgery.

(2) Courses of instruction in—

(*a*) Operative Surgery, and Surgical Anatomy of not less than 30 demonstrations,

(*b*) Surgical case-taking, and Practical Surgery (including

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minor Surgery and bandaging) of not less than 30 demonstrations, and

(*c*) The administration of Anæsthetics.

(3) Attendance upon the Surgical practice of a recognised Hospital during three years with clinical instruction and lectures on clinical Surgery and twelve months' practice as dresser during that period with a careful record of at least six surgical cases which the candidate may be required to produce before the Examiners.

(4) A course of lectures in Ophthalmology.

Examination of the Eye: (*a*) objective, (*b*) functional.

Diseases of the Conjunctiva, Cornea, Sclerotic, Iris, Ciliary body, Choroid Lens, Vitreous, Retina, Optic nerve, Lids, Lachrymal organs and Orbit. Congenital Defects. Amblyopia and functional disorders of Sight, Glaucoma.

Disturbances of mobility of the Eye.

Optical properties of the normal eye, and the theory of spectacles.

Anomalies of Refraction and Accommodation.

Operations and their technique.

Practical instruction in Ophthalmoscopy and Refraction.

(5) Three months of attendance at a recognised hospital for diseases of the Eye.

(6) Three months of attendance at the Surgical Out-door Dispensary of a recognised hospital.

MIDWIFERY AND GYNÆCOLOGY.

(1) A course of lectures on Midwifery and Gynæcology.

(2) A course of not less than 20 demonstrations on Practical Midwifery and Gynæcological instruments and appliances.

(3) The conduct of at least six labours, three of which must be in the presence of one of the obstetric assistants or any legally qualified practitioner in Medicine (certificate from whom in this subject will be accepted). Candidates must draw up an accurate record of the labour cases attended by them. They may be required to produce their case-books before the examiners in evidence of diligent work.

(4) Attendance for not less than two months as a clinical clerk in a Gynæcological ward or out-patient room.

PATHOLOGY.

(1) A course of lectures on General Pathology including Bacteriology and Parasitology treated in an elementary manner.

(2) A course of practical instructions and demonstrations extending over not less than four months.

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(3) Attendance in the post-mortem room for not less than three months and the careful performance of six post-mortems in the presence of the Teacher or his Assistant.

General Pathology—Definition. Health and disease. Ætiology. Heredity and environments. Defects of development. Processes of Infection and Immunity. Disorders of Nutrition and Autointoxication, Dropsy. Disorders of the blood and circulation. Degenerations and retrogressive changes. Processes of inflammation and repair. The process of fever. The more important structural changes produced in the organs and tissues by disease as recognized by the naked eye and microscopical investigations. Tumours and specific granulomata.

Bacteriology—The Morphology and Biology of the following micro-organisms :—Pyogenic Cocci, Pneumococcus and Gonococcus ; B. Coli Communis ; B. Anthracis ; B. Diphtheriæ ; B. Lepræ ; B. Tetani ; B. Tuberculosis ; B. Typhosus ; Vibrio Choleræ Asiaticæ ; B. Pestis ; Streptothrix Actinomycosis group ; B. Dysentericus ; M. Melitensis ; Diplococcus Intercellularis Meningitidis B. Influenzæ ; Spirillum Obermeieri ; Spirochæte of Syphilis ; Pathogenic moulds.

Parasitology—The Morphology and Biology of the following :—Hæmatozoon Malariæ ; Piroplasma ; Amœba coli ; Amœba dysenterica ; Trypanosomes ; Distomum Hepaticum ; Distomum crassum ; Ascaris Lumbricoides ; Oxyuries Vermicularis ; Trichina Spiralis ; Anchylostomum duodenale ; Filaria Sanguinis Hominis ; Dracunculus Medinensis ; Tricocephalus Dispar ; Tænia Solium ; Tænia Mediocanellata ; Tænia Echinococcus ; Bothriocephalus latus ; Bilharzia hæmatobia ; Parasite of Kalazar ; Amphistomum Hominis ; Acarus Scabiei ; Pediculi.

Practical.

Technique of collection and pathological examination of morbid materials such as Blood, Gastric and Intestinal contents, Urine, Pus, Sputum and Exudates.

A practical knowledge of the apparatus used for bacteriological work, *viz* ,—Hot air Steriliser, Steam Steriliser, and Incubator. Preparation of culture media. Culture and inoculation methods.

Preparation, section-cutting, staining and mounting of pathological tissues and their microscopical examination with a view to their recognition.

MEDICAL JURISPRUDENCE.

(1) A course of lectures on Medical Jurisprudence.

(2) Attendance at not less than twelve medico-legal post-mortem examinations.

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Medical evidence, with special reference to Indian Evidence Act Medico-legal Reports. Dying Declarations.

Signs of Death. Post-mortem stains. Rigor Mortis. Cadaveric Spasm. Putrefaction in Air and Water.

Mummification. Adipocere Examination of the dead body. Post-mortem Examination in medico-legal cases.

Age in its medico-legal relations. Development of the fœtus. Changes after birth. The teeth. Ossification and Union of Epiphyses.

Identity of the living. Identity of the dead. Sexual characteristics of the skeleton.

Modes of dying. Causes of Sudden death.

Death from asphyxia. Hanging. Strangulation. Suffocation Throttling. Drowning. Resuscitation from Drowning.

Mechanical injuries and wounds. Chemical, microscopical and spectroscopical examination of blood stains and other stains.

Death by burns and scalds. Death from lightning, electric current, heatstroke and cold. Starvation—its causation, symptoms and post-mortem appearances. Medico-legal questions relating to pregnancy, delivery and abortion, infanticide, criminal offences, legitimacy.

Medico-legal aspects of insanity. Forms of insanity. Delusions, Illusions, Hallucinations Criminal responsibility. Modes of placing lunatics under restraint. Medical certificates. Lunacy certificates. Examination of lunatics. Testamentary capacity. Feigned insanity. Placing habitual drunkards under restraint.

Toxicology. Diagnosis and general treatment of poisoning. Evidence of poisoning in the dead. Local effects produced by poisons, disease and post-mortem changes. Preservation of viscera for analysis. The detection of poisons, chemical and physiological tests.

Toxicology of the following poisons: Mineral Acids. Corrosive alkalies, carbolic acid, corrosive sublimate, oxalic acid, Salts of Copper, Lead and Antimony. Arsenic, Phosphorus Opium, Cyanogen compounds, *alcohol*, Chloroform, Chloral Hydrate. Kerosine oil, Carbon Dioxide, Carbon Monoxide, Sulphuretted Hydrogen, Strychnine, Aconite, Datura, Belladona, Cannabis Sativa—Nerium Odorum, Cocaine; Calotropis gigantea, Plumbago Zeylanica, snake venom. Poisonous Animal Food.

HYGIENE.

(1) A course of lectures in Hygiene including demonstrations.

(2) Six practical Demonstrations.

(3) Practical instruction in Vaccination by any authorised Vaccinator.

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Definition. General Hygiene. Special Hygiene. Public Health.

Impurities in Air. Effects of vitiated air generally. Ventilation. Natural and artificial Cubic space.

Impurities in water. Their source and effects. Diseases caused by impure water Water-supply. Methods of purification and filtration.

Physical examination of waters as regards their potability.

Food. Functions of the four classes of ; elementary principles of dieting. Average diets Dietaries.

Different varieties of food.

Meat. Inspection of animals and of meat. Effects of unsound meat. Poultry and game. Fish. Cooking. Milk. Vegetable Foods. Wheat. Flour. Bread Barley. Oat. Maize. Rice. Millet, &c. Leguminosæ, etc. (Dal). Roots and Tubers (potatoes, carrot, etc.). Herbaceous Vegetable (cabbage, cauliflower, etc.). Fruits. Prepared starches. Sugar. Concentrated foods.

Beverages and condiments. The Removal and Disposal of Sewage. Clothing.

The construction of the dwelling house. Sanitary inspection of a house.

Personal Hygiene in India. The causation and prevention of Endemic and Epidemic diseases.

The general principles of disinfection and the methods of carrying them into effect.

Disposal of the dead.

The powers and legal obligation of the medical practitioner under the Municipal Act ; the correct registration of the cause of death.

11. The full marks for each subject and the minimum marks required for passing shall be as follows :—

	Written.	Oral.	Practical.	Total marks.	Passing marks.	Passing marks in Practical.
Medicine ..	600	200	200	1,000	500	66
Surgery ..	600	200	200	1,000	500	66
Midwifery ..	500	100	200	800	400	66
Pathology ..	400	100	100	600	200	34
Medical Jurisprudence	400	100	100	600	200	34
Hygiene ..	200	100	100	400	200	34

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12. In order to obtain Honours in any branch a candidate must obtain half the marks allotted to each portion of the examination, written, oral and practical and two-thirds in the aggregate.

CHAPTER XLVII.

DOCTOR OF MEDICINE.

1. An examination for the degree of Doctor of Medicine shall be held annually in Calcutta and shall commence at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any Bachelor of Medicine may be admitted to this Examination on the production of certificates—

Of having subsequently to passing the M.B. Examination, completed, either three years' continuous practice of the Medical Profession or two years of Hospital practice.

Each of these periods shall be reduced by one year if the candidate be a Graduate with Honours in Medicine.

No application shall, however, be entertained unless two Members of the Faculty of Medicine or two Doctors of Medicine shall have testified, to the satisfaction of the Syndicate, that since graduating as Bachelor of Medicine, the candidate has practised his profession with repute for the period specified, and that in habits and character, he is a fit and proper person for the Degree of Doctor.

3. Every candidate for admission to the examination shall send his application to the Registrar, with a certificate in the form prescribed by the Syndicate and a fee of Rs. 100, at least two months before the date fixed for the commencement of the examination.

4. A candidate who fails to pass or present himself for examination shall not be entitled to claim a re und of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of one hundred rupees on each occasion.

5. Every candidate shall be examined in the following subjects :—

Medicine (Two papers, of which one may be a case for commentary).

Pathology (one paper).

Mental Diseases (one paper).

The examination shall be written, oral and practical, and shall also include a thesis.

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6 A candidate for the Degree of Doctor of Medicine shall transmit to the Registrar not less than two months before the commencement of the examination, a thesis or published work embodying the resu t of independent research and having definite relation to the subjects of Medicine, Pathology or Mental Diseases. The candidate must indicate in what respects his thesis or research appears to him to advance medical knowledge or practice. The candidate may also submit any printed contribution or contributions to the advancement of Medical Science published independently or conjointly.

If the thesis or published work is approved by the Examiners, they will report on the same as "commended" or 'higaly commended." Unless the thesis is commended, the candidate shall not be admitted to the examination.

7. As soon as possible after the examination, the Syndicate shall publish a list of successful candidates arranged in alphabetical order with the titles of their theses and the opinions of the Examiners thereon placed against the name of each candidate. If in the opinion of the Examiners sufficient merit be evinced, a University gold medal shall be awarded to the candidate passing with the greatest distinction.

8 Any candidate who is not a Bache or of Medicine may be admitted to the examination for the degree of Doctor of Medicine n accordance with the conditions laid down in Regulations 5 and 6 and on producing certificates—

(*a*) of having passed the Licentiate Examination in Medicine and Surgery of the University :
(*b*) of having passed the examination in Zoology required for the Preliminary Scientific M.B. Examination ;
(*c*) of having practised the medical profession with repute for the period specified.
(*d*) of being in habits and character a fit and proper person for the Degree of Doctor.

CHAPTER XLVIII.

MASTER OF SURGERY.

1. An examination for the degree of Master of Surgery shall be held annually in Calcutta and shall commence at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

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2. Any Bachelor of Medicine may be admitted to this examination on the production of certificates—

(*a*) of having subsequently to passing the M.B. Examination, completed—

Three years' continuous practice of the medical profession.

Two years of hospital practice.

Each of these periods shall be reduced by one year if the candidate be a graduate in Medicine with Honours in Surgery.

No application shall, however, be entertained unless two members of the Faculty of Medicine or two Masters of Surgery shall have testified, to the satisfaction of the Syndicate, that since graduating as Bachelor o Medicine, the candidate has practised his profession with repute for the period specified, and that in habit and character, he is a fit and proper person for the Degree of Master.

3. Every candidate for admission to the examination shall send his application to the Registrar with a certificate in the form prescribed by the Syndicate at least two months before the date fixed for the commencement of the examination.

4. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of one hundred rupees on each occasion.

5. Every candidate shall be examined in the following subjects :—

(1) Surgery (two papers, one of which may be a case for commentary)

(2) Surgical Pathology and Surgical Anatomy (one paper).

(3) Ophthalmology or any other branch of Special Surgery that may be recognised by the University from time to time (one paper).

(4) Operative Surgery and the use of instruments.

6. The examination shall be written, oral and practical.

A candidate for the Degree of Master of Surgery shall transmit to the Registrar not less than two months before the commencement of the examination, a thesis or published work embodying the result of independent research and having definite relation to Surgery. The candidate must indicate in what respects his thesis or research appears to him to advance surgical knowledge or practice. The candidate may also submit any printed contribution or contributions tending to the advancement of Medical Science published independently or conjointly.

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If the thesis or published work be approved by the Examiners, they will report on the same as "commended," or "highly commended." Unless the thesis is commended, the candidate shall not be admitted to the examination.

7. As soon as possible after the examination, the Syndicate shall publish a list of successful candidates arranged in alphabetical order, with the titles of their theses and the opinions of the examiner thereon placed against the name of each candidate. If in the opinion of the Examiners sufficient merit be evinced, a University gold medal shall be awarded to the candidate passing with the greatest distinction.

8. Any candidate who is not a Bachelor of Medicine may be admitted to the Examination for the degree of Master of Surgery, in accordance with the conditions laid down in Regulations 5 and 6, on producing certificates to the following effect—

(*a*) of having passed the Licentiate Examination in Medicine and Surgery of the University ;

(*b*) of having passed the examination in Zoology required for the Preliminary Scientific M.B. Examination ;

(*c*) of having practise the Medical profession with repute for the period specified ;

(*d*) of being in habits and character a fit and proper person for the degree of Master of Surgery.

CHAPTER XLIX.

MASTER OF OBSTETRICS.

1. An examination for the Degree of Master of Obstetrics shall be held annually in Calcutta and shall commence at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any Bachelor of Medicine may be admitted to this examination provided he shall produce certificates to the following effect—

(*a*) of having subsequent to passing the M.B. Examination, attended during a period of six months a course of clinical instruction in a recognised hospital or ward specially devoted to the treatment of Obstetric and Gynæcological cases ;

(*b*) of having, subsequent to passing the M.B. Examination, had personal charge of at least twenty cases of labour, a record of which must be submitted ;

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(*c*) of having subsequently to passing the M.B. Examination, completed—

Either three years' continuous practice of the medical profession.

Or two years of hospital practice.

If the candidate be a graduate in Medicine with Honours in Midwifery, each of these periods shall be reduced by one year.

No application shall, however, be entertained unless two Members of the Faculty of Medicine or two Masters of Obstetrics shall have testified, to the satisfaction of the Syndicate, that since graduating as Bachelor of Medicine the candidate has practised his profession with repute for the period specified and that in habits and character he is a fit and proper person for the Degree of Master.

3. Every candidate for admission to the examination shall send his application to the Registrar with a certificate in the form prescribed by the Syndicate and a fee of Rs. 100 at least two months before the date fixed for the commencement of the examination.

4. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of one hundred rupees on each occasion.

5. Every candidate shall be examined in the following subjects :—

(1) Obstetrics (Two papers, one of which may be a case for commentary).

(2) Anatomy, Physiology, Embryology and Pathology in relation to Obstetrics and Gynæcology (one paper).

(3) Gynæcology (one paper).

(4) Operative Gynæcology and the use of instruments.

The examination shall be written, oral and practical

A candidate for the degree of Master of Obstetrics shall transmit to the Registrar, not less than two months before the commencement of the examination, a thesis or published work embodying the result of independent research and having definite relation to Obstetrics or Gynæcology. The candidate must indicate in what respects his thesis or research appears to him to advance Obstetric or Gynæcological knowledge or practice. The candidate may also submit any printed contribution or contributions tending to the advancement of Medical Science published independently or conjointly.

If the thesis or published work be approved by the Examiners,

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they will report on the same as "commended," or "highly commended."

Unless the thesis is commended, the candidate shall not be admitted to the examination.

7. As soon as possible after the examination, the Syndicate shall publish a list of successful candidates arranged in alphabetical order, with the titles of their theses and the opinions of the Examiners thereon placed against the name of each candidate. If in the opinion of the Examiners sufficient merit be evinced, a University gold medal shall be awarded to the candidate who shall have passed with the greatest distinction.

8. Any candidate who is not a Bachelor of Medicine may be admitted to the Examination for the Degree of Master of Obstetrics in accordance with the conditions laid down in Regulations 5 and 6, on producing certificates to the following effect :—

(*a*) Of having passed the Licenciate Examination in Medicine and Surgery of the University.

(*b*) Of having passed the Examination in Zoology required for the Preliminary Scientific M.B. Examination.

(*c*) Of having practised the medical profession with repute for the period specified.

(*d*) Of having, subsequent to passing the Licentiate Examination in Medicine and Surgery, attended during a period of six months a course of clinical instruction in a recognised hospital or ward specially devoted to the treatment of Obstetric and Gynæcological cases.

(*e*) Of having, subsequent to passing the Licentiate Examination in Medicine and Surgery, had personal charge of at least twenty cases of labour, a record of which must be submitted.

(*f*) Of being in habits and character a fit and proper person for the Degree of Master of Obstetrics.

CHAPTER L.

DIPLOMA IN PUBLIC HEALTH.

1. An examination for a Diploma in Public Health shall be held annually in Calcutta and shall commence at such time as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any Bachelor of Medicine or Licentiate in Medicine and

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Surgery may be admitted to this examination on the production of certificates

(*a*) Of having, subsequent to passing the M.B. or L.M.S. Examination—

(i) attended during three months the practice of a hospital for infectious diseases or in a special ward in a General Hospital where such cases are treated,

(ii) attended during a period of six months an approved course of Practical Laboratory instruction in Chemistry, Bacteriology and Pathology of those diseases of animals that are transmitted to man,

(iii) been diligently engaged for at least six months in acquiring a practical knowledge of the duties, routine and special, of Public Health administration either independently as a Sanitary Officer of a town or a district, or under the supervision of a recognised Medical Officer of Health or a Teacher in the Department of Public Health of a recognised Medical College.

No application shall, however, be entertained unless two Members of the Faculty of Medicine or two Doctors of Medicine shall have testified to the satisfaction of the Syndicate that since passing the M.B. or L.M.S. Examination the candidate has practised his profession with repute for the period specified, and that in habits and character, he is a fit and proper person to receive the Diploma in Public Health.

3. Every candidate for admission to the examination shall send his application to the Registrar with a certificate in the form prescribed by the Syndicate, and a fee of Rs. 100 at least two months before the date fixed for the commencement of the examination.

4. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of fifty rupees on each occasion.

5. Every candidate shall be examined in the following subjects :—

(*a*) Chemistry and Physics (as applied to Public Health)—one paper and a practical examination.

(*b*) Etiology of Disease (including Pathology, Bacteriology and Parasitology)—one paper and a practical examination.

(*c*) Hygiene—one paper.

(*d*) Sanitation, Sanitary Engineering, Sanitary Law and Vital Statistics—one paper.

(*e*) Sanitary reporting.

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The examination shall be written, oral and practical.

6. The limits of the subjects referred to in paragraph 5 shall be as follows :—

(*a*) Chemistry—Constitution of the atmosphere. Pure and impure waters. Food and its adulteration. Poisonous substances used in manufactures.

Methods of examination of water and air for hygienic purposes, including a knowledge of analytical methods and the interpretation of results.

Chemical examination of foods and the detection of common forms of contamination.

Chemistry of antiseptics and disinfectants.

Physics—General laws of Heat, Mechanics, Pneumatics, Hydrostatics and Hydraulics in their application to warming. Ventilation, water-supply and drainage. Sources, storage and purification of water-supply.

Geology—Soils, clays, rocks, sedimentary rocks. Springs. Natural gases. Brackish waters and influence of contact of sea water with ordinary fresh water. Ordinary constituents of fresh water and sea water; solid matter and soluble constituents not separable by filtration.

The Geological conditions determining the healthiness of sites for dwellings. Causes.

Climatology—A general knowledge of meteorological conditions; meteorology in relation to health; meteorological instruments, their construction and use. Reading and correction of instruments and tabulating the results of meteorological observation.

(*b*) Microscopy—The recognition of (1) the constituents of food such as starches, muscular fibre, e c., (2) of the ch ef fibres of clothing such as wool, cotton, silk, etc., and (3) of constitu nts of ordinary dust and deposits from water. Detection of the common forms of adulter tion of food by the microscope. Etiology of diseases including Pathology. Microscopic impurities of a r and water.

Bacteriology and Parasitology—

Pathology of Epidemic and Endemic diseases. Influence of unwholesome food, air, water, occupation, dwelling, climate, season, soil. The morphology of microbes; artificial cultivation of microbes, staining of microbes in fluids and in tissues. Modes of inoculation and special characters of pathogenic microbes; special characteristics with practical work on pathogenic micro-organisms. Aerobic and Anærobic Bacteria. The general pathology of infection.

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Nature of immunity from infective disease and modes producing it with evidence of having received practical instruction in those diseases of animals that are transmissible to man. Antiseptics and disinfectants.

Parasites and other organisms infecting foodstuffs or the human body.

The methods of bacteriological investigation and analysis and the bacteriology of water, air, food and soil.

(*c*) Hygiene—Conditions of healthy nourishment, lodgment and activity. The hygiene of public and private buildings and of particular occupations. The origin, causation, symptoms, propagation, geographical distribution and prevention, of the epidemic, endemic and other infective diseases, both of temperate and of tropical climates. Nature and origin of parasitic diseases. Effects on health of over-crowding, vitiated air, impure water, polluted soil and bad or insufficient food. Unwholesome trades and the diseases to which they give rise and the prevention of nuisances arising therefrom. Nuisances injurious or dangerous to health. The prevention and control of epidemic diseases by isolation, disinfection, vaccination and other methods. Quarantine. Hospital for infectious diseases. Conveyance of the sick. Prostitution. Diseases of animals and vegetables in their relation to the health of man. Famine diseases, poisons in manufactures in commercial and domestic use. Causes and conditions which produce climate; general effects of climate; acclimatization.

(*d*) Sanitary Law and Sanitation—

(*i*) Laws and Statutes relating to Public Health enacted in Great Britain and in India, including the model By-laws of the local Government Board. The Famine and Jail Codes; the Military Regulations and the duties of Health Officers and Port Surgeons and their subordinates.

(*ii*) Domestic and general sanitation of houses, schools, factories and workshops, and of villages and towns.

(*iii*) Regulation of offensive, dangerous or unhealthy trades and occupations.

(*iv*) Inspection of slaughter-houses, cow-sheds, etc.

(*v*) Inspection of meat and other articles of food.

(*vi*) The methods applicable to the medical investigation of epidemics.

Sanitary Engineering—(*a*) Water-supply. (*b*) Drainage, sewerage and disposal of refuse. (*c*) The construction of

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dwellings, barracks, hospitals, schools, factories, etc., in accordance with the principles of warming, ventilation, drainage, water-supply, etc. (*d*) Geological data referring to the above. (*e*) Reading and interpretation of plans, sections, scales of drawing, etc.

Vital Statistics—Calculation of population, birth-rate, marriage-rate and death-rate; mortality from zymotic diseases; sickness-rate; relation between occupation and mortality; life tables, their construction and interpretation of the value of statistical facts, average and methods, specially in reference to India.

(*e*) Sanitary Reporting—The candidate will be required to visit and report upon the sanitary condition of some locality assigned to him by the Examiners.

7. As soon as possible after the examination, the Syndicate shall publish a list of successful candidates arranged in alphabetical order. If in the opinion of the Examiners sufficient merit be evinced, a University gold medal will be awarded to the candidate who shall have passed with the greatest distinction.

CHAPTER LI.

INTERMEDIATE EXAMINATION IN ENGINEERING.

1. The Intermediate Examination n Engineering shall be held annually at such time and place as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. Any undergraduate of the University may be admitted to this examination, provided he has prosecuted a regular course of study in a college of Engineering affiliated to the University, for two academical years after passing the Intermediate Examination in Arts or in Sciece.

3. Every candidate for admission to the examination shall send to the Registrar his application with a certificate, in the form prescribed by the Syndicate, and a fee of Rs. 30, at least fourteen days before the date fixed for the commencement of the examination. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of thirty rupees on each occasion.

4. Every candidate shall be examined in the following subjects :—

I. Mathematics.
II. Science.

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III. Descriptive Engineering.
IV. Surveying.
V. Drawing and Estimating.

5. The limits of the subjects shall be as follows :—

MATHEMATICS.

Computations and Mensuration.

(*a*) Approximate and abbreviated methods of performing numerical calculations.

The Theory of Logarithms. Use of Logarithmic tables. Application of Logarithms to arithmetical and trigonometrical calculations, including the solution of triangles and the determination of heights and distances. Proof of the formulæ used.

(*b*) Mensuration of plane and solid figures, including the areas of plane polygons in Cartesian and polar co-ordinates, and the app ications of Simpson's rules, the prismoidal formula and Guldin's theorems. Proof of the formulæ used.

Elements of Plane Analytical Geometry and of the Differential and Integral Calculus.

(*a*) Rectangular Cartesian co-ordinates and polar co-ordinates. Graphs of simple functions. Analytical Geometry of the straight line and circle. Standard equations of the parabola, ellipse and hyperbola.

(*b*) Differentiation in general including Leibnitz's Theorem; partial differentiation and differentiation of implicit functions. Orders of smallness; infinitesimals and differentials. Elementary proof of Taylor's and Maclaurin's Theorems. Expansions of functions of a single variable. Maximum and minimum values of function of a single variable.

(*c*) Tangents, normals, asymptotes and multiple points. Tracing of simple plane curves.

(*d*) Integration regarded as a process of summation and as the inverse of differentiation. The integrals of such simple functions as axn, $aebx$, $a \sin (bx + c)$, $a \cos (bx + c)$.

Applications to the evaluation of plane areas, volumes and surfaces of revolution, and centres of gravity.

Statics and Dynamics.

(*a*) Uniform and uniformly acce'erated motion. Composition of velocities and accelerations. Relative velocities and accelerations. Projectiles.

The laws of motion with simple illustrations, such as the

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motion of a particle on an inclined plane, motion of two particles connected by a string, uniform circular motion of a particle.

(*b*) Composition of concurrent and parallel forces acting on a rigid body. Centre of parallel forces; centres of mass: Reduction of any system of coplanar forces acting on a rigid body to a single resultant force and couple, and to a single resultant force or couple. Conditions of equilibrium; statically equivalent systems of forces; problems on equilibrium. Friction. Machines.

(*c*) Impulse of a force; principle of linear momentum for a single particle and for a system of particles; simple cases of impact, including the impact of two spheres whose centres move in the same plane.

Work of a force; principle of energy for a single particle and for a system of particles; application of the principle to the solution of problems.

Elementary Applied Mechanics.

(*a*) *Definition of Terms.*—Structure. Stress. Strain Working Load. Factor of Safety. Fatigue. Elasticity.

(*b*) *External Influences tending to produce Rupture in Simple Beams.*—Moments of Flexure and Resistance. Cantilevers. Beams supported at two ends. Moment of Inertia Shearing Stress, Deflection.

(*c*) Application in simple cases of the principles of Strength and Deflection to simple Timber and Iron Beams and Roofs.

(*d*) *Foundations and Walls.*—Stability of Walls. Failure by Overturning, Crushing, and Sliding. Empirical Rules for Retaining Walls.

SCIENCE.

CHEMISTRY.

Theoretical.

(*a*) Chemical changes.

Conservation of mass.

Elements and compounds.

Stœchiometric Laws—Equivalent weights.

Boyle's and Charles' Laws.

Atoms and Molecules.

Avogadro's Law.

Experimental determination of density of gases and vapours.

Atomic weights—methods and means for the determination of atomic weights.

Symbols, formulæ, and Chemical equations.

(*b*) The Chemistry of those Elements and compounds of importance to Engineers.

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Bases, acids and salts. General properties and relations to one another.

General methods for preparation of halides, oxides, hydroxides, sulphides, sulphates, nitrates, phosphates, carbonates, carbides, hydrides. Water of crystallisation, double salts.

(*c*) Laws of mass action; dissociation phenomena.

Determination of molecular weights of substances in solution.

Faraday's Laws of Electrolysis.

The Ionic Theory.

Elements of Thermo-Chemistry; combustion, explosions.

(*d*) Chemical Technology.

Natural waters. Hardness. Softening on the large scale.

Quick-lime, hydraulic lime. Portland cement; Plaster of Paris; setting and hardening of mortars and cements.

Glass, pottery, bricks.

Red lead, white lead, zinc white, oxide of iron paints.

Sulphuric acid, hydrochloric acid, sodium carbonate, chlorine, bleaching powder.

Practical.

Gravimetric estimation in simple salts of :—Ca, Mg, Fe, Al, Cu, Ag, Ba, Si,O_2, CO_2, SO_3, P_2O, HCL.

Volumetric estimations of acids, alkalies, iron, and chlorides.

Quantitative analysis of limestone, dolomite, brown hæmatite, and silver coin.

The most characteristic reactions of salts of :—

Ag, Pb, Hg, Bi, Cu, As, Sb, Sn, Fe, Al, Cr, Zn, Mn, Ba, Sr, Ca, Mg, Na, K, NH_4, H_2 SO_4, HCL, HNO_3, H_2, CO, HF, H_2SO_4, H_2S, H_2SiO_3, H_3 PO_4.

Physics.

(*a*) *Heat.*

Expansion of solids, liquids, and gases; Regnault's experiments on the absolute expansion of mercury and the expansion of gases. Charles' law. Principles of thermometry. Thermometers for various purposes. Absolute temperature. Density of solids, liquids, and gases. Calorimetry; correction for radiation. Specific heats of solids and liquids. Determination of the specific heat of gases at constant pressure and constant volume. Dulong and Petit's law. Change of state of aggregation. Critical temperature; continuity of state. Measurement of heat of fusion and vaporisation. Influence of pressure on melting and boiling points. Methods of liquefying gases. Pressure of saturated steam. Hygrometry. Conduction; simple

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cases of steady flow across a plate and along a bar. The fundamental laws of thermodynamics. Joule's experiments. Adiabatic transformations. Cooling of gases by expansion. The diagram.

Outline of the action of Steam Engine, Gas Engine, Petroleum Engine.

(*b*) *Statical Electricity.*

Electrification by friction. Electroscopes. Ice-pail experiments. Induction. Electrophorus. Influence machine. Electric work and energy; potential, lines and tubes of force, equipotential surfaces. Quadrant: electrometer. Electrostatic units. Condensers; capacity, two concentric spheres, the Leyden jar. Specific inductive capacity. Statical comparison of capacities.

(*c*) *Current Electricity.*

Chemical and Thermal methods of producing currents. Electrolytic conduction. Electrolysis of fused compounds and of saline solutions. Faraday's laws. Coulometers.

Ohm's law. Kirchhoff's laws. Units of resistance. Resistance coils. Wheatstone's bridge. Resistance of battery. Resistance of galvanometer. Electromotive force. Standard cells. Determination of Electromotive force; the Potentiometer. Joule's law.

(*d*) *Magnetism.*

Fundamental experiments. Magnetic fields. Magnetic curves. Declination theodolite; dip circle. Methods of magnetisation.

Relation of magnetism to electricity. Oersted's experiment. Galvanometers. Electrodynamic experiments; Electromagnets, types. Permeability and methods of measuring it; the ballistic galvanometer. Magnetic hysteresis. Magnetic flux, magnetomotive force, reluctance. Law of traction. Induction of currents; Lenz's law. Ruhmkorff's coil. Self-induction. Electromagnetic units.

(*e*) *Radiant Energy.*

Reflection and refraction. Velocity of propagation; Foucault's and Fizeau's experiments. Plane and spherical mirrors. Refraction. Prisms, minimum deviation. Determination of refractive indices of solids and liquids. Lenses. The Sextant, Telescopes and field glasses. Simple experiments on radiant heat and electrical radiation. Dispersion. Spectroscopes and spectra. Colour.

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Practical Exercises.

Measurement of thickness of plates by wire gauge, micrometer screw gauge, micrometer callipers, cover-glass tester, spherometer.

Determination of radius of curvature of lenses by the spherometer.

The cathetometer; adjustments; verification of Boyle's law; co-efficients of tensional elasticity.

Dividing machines and their uses.

The balance; adjustments; weighing by the method of vibration; specific gravity of solids.

Moments of inertia.

The barometer; reading and correction.

Thermometer: comparison, verification of fixed points.

Co-efficients of expansion.

Hygrometry; dew-point hygrometers; psychrometers; comparison of results.

Calorimetry; correction for loss of heat; specific heat of solids; heat of evaporation.

Melting and boiling points; distillation.

Pressure of aqueous vapour.

Study of magnetic field by iron-filings.

Faraday's ice-pail experiments.

Setting up and reading of galvanometers. Ohm's law; Wheatstone's bridge; the meter bridge; insulation resistance. The Potentiometer; current, and voltage, measurements. Kelvin's balance: current, voltage, wattage.

Heating effects of currents.

Electrolytic current measurements.

Exercises with the spectroscope. Measurement of indices of refraction. Photometric experiments. Focal distances of mirrors and lenses.

Descriptive Engineering.

Materials of Construction.—Structure, classification, and characteristic qualities of building stones, quarrying and blasting, preparation of bricks and tiles, cementing materials, plasters, paints, and varnishes, timber, iron and steel, lead, copper, zinc, and the common alloys.

Details of Construction.—Brick and stone masonry, earthwork, carpentry, foundations, walls, floors and roofs of buildings. Arches, construction of masonry, wooden and iron bridges. construction and maintenance of roads.

Surveying.

Prismatic Compass, Level, Theodolite, and Plane Table. Topographical surveying of limited areas. Practice of levelling.

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Route surveying and laying out curves. (Attested Surveys executed by the candidate, will be submitted to the Examiner, to which marks will be assigned.)

DRAWING AND ESTIMATING.

(i) Freehand Drawing.
(ii) Projection. (*a*) Orthographic, (*b*) Isometric, Topographical and Engineering Drawings.
(iii) The Estimating and preparation of indents for materials of simple buildings, culverts; earthwork.

6. As soon as possible after the Examination, the Syndicate shall publish a list of the successful candidates in order of merit.

Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

7. There shall be ten papers and the maximum marks of the whole examination shall be .. .. 4,200 *marks*.

The subjects and marks shall be distributed as follows :—

I.—*Mathematics*

(1,200 *marks*.)

Paper I.—Trigonometry and Mensuration .. 400 *marks*.
Paper II.—Statics, Dynamics and Applied Mechanics. 500 *marks*.
Paper III.—Differential and Integral Calculus and theory of curves .. .. .. 300 *marks*.

II.—*Science*.

(1,000 *marks*.)

Paper IV.—Chemistry .. .. 250 *marks*.
Practical Examination in Chemistry .. 250 *marks*.
Paper V.—Physics .. .. .. 250 *marks*.
Practical Examination in Physics .. 250 *marks*.

III.—*Engineering*.

(1,000 *marks*.)

Paper VI.—Materials of construction .. 400 *marks*.
Paper VII.—Details of construction .. 400 *marks*.
Paper VIII.—Estimating .. .. 200 *marks*.

IV.—*Surveying*

(500 *marks*.)

Paper IX.—Theoretical . .. 200 *marks*.
Practical examination .. .. 300 *marks*.

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V.—*Drawing.*

(500 *marks.*)

Paper X.—Theoretical	.. ..	200 *marks.*
Practical examination	.. ..	300 *marks.*

8. The pass marks for the Intermediate Examination in Engineering shall be one-third in each group of subjects and half of the aggregate.

9. Any candidate who has failed in one subject only, and by not more than 5 per cent. of the full marks in that subject, and has shown merit by gaining 60 per cent. or more in the aggregate of the marks of the examination, shall be allowed to pass.

10. If the Examiners are of opinion that in the case of any candidate not covered by the preceding Regulations, consideration ought to be allowed by reason of his high proficiency in a particular subject, or in the aggregate, they shall report the case to the Syndicate, and the Syndicate may pass such candidate.

CHAPTER LII.

BACHELOR OF ENGINEERING.

1. An examination for the Degree of Bachelor of Engineering shall be held annually at such time and place as the Syndicate shall determine, the approximate date to be notified in the Calendar.

2. The examination shall be held in the following branches :—

I. Civil Engineering ;
II. Mechanical and Electrical Engineering ;
III. Mining Engineering ;

and the Diploma shall distinctly state in which branch the candidate has qualified.

3. Any undergraduate of the University may be admitted to this examination provided he has prosecuted a regular course of study in a College affiliated up to the standard of the B.E. Examination for two academical years after passing the Intermediate Examination in Engineering, in class, laboratory and workshop, in the particular branch in which he presents himself for examination.

4. A candidate shall not present himself for examination in any one year in more than one branch, but a Bachelor of Engineering who has graduated in one branch may present himself for examination in another branch, provided he has prosecuted

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a regular course of study in a College affiliated up to the standard of the B.E. Examination for one academical year after passing the B.E. Examination, in class, laboratory and workshop, in the special subject of the branch in which he presents himself for examination. He shall be excused attendance and examination in subjects in which he has previously passed.

5. Every candidate for admission to the examination shall send to the Registrar his application with a certificate in the form prescribed by the Syndicate, and a fee of a Rs. 40, at least fourteen days before the date fixed for the commencement of the examination. A candidate who fails to pass or to present himself for examination shall not be entitled to a refund of this fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of rupees forty on each occasion.

6. As soon as possible after the examination the Syndicate shall publish a list of the successful candidates in each branch arranged in two classes in order of merit.

Successful candidates shall, on passing, receive a diploma in the form entered in Appendix A.

7. Every candidate shall be examined in—

(i) Mathematics.
(ii) Science,
(iii) Engineering
(iv) Drawing and Design.

The limits of the different subjects shall be as follows :—

MATHEMATICS.

For Candidates in all Branches.

Pure Mathematics—

(*a*) Elementary Analytical Geometry and Differential Calculus with special reference to the properties of the parabola, ellipse, hyperbola and other commonly occurring curves whose equations are simple in form.

(*b*) Integral Calculus including the standard integrals, integration by substitution and by parts.

Application of the integral calculus to the determination of lengths of curves, plane areas, volumes, centres of mass and moments of inertia in simple cases.

(*c*) Simple ordinary differential equations of the first and second orders.

Mixed Mathematics—

(*a*) Principle of Virtual Work. Analytical conditions of equilibrium. Solution of plane problems in Statics.

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by resolving and taking moments, by the principle of virtual work and by graphical methods. Bending moments. The unicular polygon. The Catenary. Equilibrium of Simple jointed frame-works.

(*b*) Units and dimensions.

Statical equivalence of the externally impressed forces with the effective forces in any system of bodies. The principles of linear and angular momentum. The principle of energy.

Gravitational potential energy ; potential energy of a stretched elastic string and of a compressed spring.

Motion under gravity of a particle on a smooth vertical circle and on ther simple curves.

Motion of a rigid body about a fixed axis.

Simple harmonic motion ; the simple, conical and compound pendulum.

(*c*) Nature and general properties of fluid pressure.

Density and specific gravity of a homogeneous mixture.

Relations between pressure, density and force.

Thrust on a plane area centre of pressure.

Resultant thrust on any immersed solid and any immersed surface, particularly in the case of a homogeneous liquid at rest under gravity.

Conditions for the equilibrium and for the stability of the equilibrium of a floating body.

Hydrostatic instruments. Determination of specific gravity. Properties of gases.

SCIENCE.

Geology.

For Candidates in Civil Engineering and Mining Engineering.

(*a*) *Astronomical Geology*—Information obtained from meteorites and by the spectroscope. Probable history of the earth in its earliest stage of existence.

(*b*) *Geognosy*—Probable internal condition ; evidences of pressures and internal heat.

(*c*) *Petrography*—Essential and accessory constituents. Classification of rocks. Characters and essential constituents of the more important Indian rocks.

(*d*) *Dynamical Geology*—Volcanic phenomena. Theories of volcanicity. Hot springs. Earthquakes. Secular upheaval and depression. Geological functions of air. Geological functions of water and ice. Chemical and Mechanical actions, denudation and deposition ; landslips. Peculiarities of Indian rivers.

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Lakes. Geological functions of plants and coral animals; islands.

(*e*) *Petrogenetic Geology*—Origin of coal beds. Origin of laterite. Origin of rock-cleavage. Ore deposits; origin and classification.

(*f*) *Architectonic Geology*—Forms of bedding. Surface markings. Concretions. Overlap. Groups of Strata. Joints. Strike and dip; out-crop; monocline; syncline; anticline. Faults, origin and kinds. Intrusive phase of eruptivity: bosses, sheet, dykes, necks; interbedded phase of eruptivity: lavas, tuffs. Unconformability.

(*g*) *Palæontological Geology*—Objects. Conditions for the entombment of organic remains. Preservation of organic remains in mineral masses; fossilisation. A general account of the uses of fossils in Geology.

(*h*) *Historical Geology*—Leading principles in stratigraphy.

Indian Geology.

I. *Pre-Cambrian History.*

1. The Archæan Group. The ancient gneisses and schists. Domegneiss; anorthosites; the charnokite series; norites and pegmatites. The Dharwarian system.

2. The Purana Group. Lower and Upper subdivisions. Outlines of the Kaddapah, Karnul and Vindhyan systems. The Unfossiliferous Rocks of the Outer Himalayas.

II. *Cambrian and Post-Cambrian History.*

3. The Dravidian Group. The Cambrians of the Salt-Range. Outlines of the distribution of the Dravidian formations in the Himalayas and in Burma; the Vaikritas and Haimantas.

4. The Aryan Group. Outline of the Aryan history of the Salt-Range and of the Himalayas; the Sirmurs and Siwaliks: subdivisions and petrology. Outlines of the history of Sind, Baluchistan, and Burma during tertiary times. The Aryan history of the Peninsula. Gondwana Land; evidences of the existence of an old Indo-African continent; Lower and Upper Gondwanas; stages; a more detailed account of the Raniganj, Jerria and Giridih coal-fields. The cretaceous rocks of Madras and Assam. The Great Deccan Outburst. Laterite. Regur. The Indo-Gangetic Plain.

(*i*) *Field Geology*—Geological surveying instruments. Tracing of boundaries and faults. Sections; how to find direction and amount of dip; Dalton's construction. Levelling; surface profile; datum level; bench marks; methods of geological levelling. Lithology; practical exercises in the identification of Indian rocks.

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Mineralogy.

For Candidates in Civil Engineering and Mining Engineering.

(*a*) Properties of crystals independent of direction.

Density and specific gravity; methods of determining specific gravities; hydrostatic balance; Jolly's balance; pycnometers; floatation methods.

(*b*) Physical Crystallography—Cleavage; fracture; hardness.

Optical properties of minerals. Kind and degreee of lustre. Double refraction and polarisation. Nicol's prism. Classification of crystals according to their optical properties.

Examination of crystals in parallel and convergent polarized light. Pleochroism.

(*c*) Geometrical Crystallography—Relation of physical properties to geometrical form. Crystalline form; faces. Planes and axes of reference; parameters; indices; symbols. Law of rationality of indices. Miller's notation. Parametral form; its selection. Symmetry: planes and axes. Systems. Simple forms and combinations. Habit. Isomorphism and heteromorphism. Crystalline aggregates. Measurement of angles; contact and reflecting goniometers.

(*d*) Chemical Mineralogy—Outlines of Classification of minerals. Group tests.

(*e*) Descriptive Mineralogy—A general description of the following minerals:—

Elements—Graphite, diamond, gold.

Sulphides—Pyrite, galena, sphalerite, chalcopyrite.

Oxides—Corundum, hematite, magnetite, quartz, cassiterite, limonite, manganese ores, bauxite.

Oxysalts:—

(i) Carbonates—Calcite, dolomite, siderite, aragonite.
(ii) Sulphates—Anhydrite, gypsum.
(iii) Phosphates—Apatite.
(iv) Silicates—Tourmaline, olivine, garnet, muscovite, biotite, talc, serpentine, pyroxene, amphibol, the felspars.

Haloid salts—Halite, fluorite.

Metallurgy and Testing of Materials.

For Candidates in all Branches.

Physical properties of metals and alloys. Influence of impurities on the properties of iron and copper. Effect of temperature changes on metals and alloys, with special reference to steel; annealing, hardening, tempering. Metallography.

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Fuel.—Classification; manufacture of coke; gas producers; calorimetry; assay of coal.

Materials—Ores, fluxes, slag; oxidising and reducing agents.

Furnaces.—Hearths for roasting and refining; shaft furnaces; the iron blast furnace; cupola; reverbatory furnaces; cupellation; cement steel furnaces; the converter. Chimneys, blowing engines. Cowper's and Whitwell's stoves.

Metallurgical processes.—Classification. Outlines of typical processes: the Blast-furnace process; puddling; Bessemer's process, acid and basic. Processess for the manufacture of aluminium and ferromanganese. Chief processes of copper-smelting; manufacture of byproducts of the smelting of sulphide ores. Methods of recovery of gold from alluvial deposit- and auriferous reefs. Methods of producing sound castings.

The candidates will be supposed to have gone through a course of practical exercises in the following subjects:—

Preparation of common alloys and determination of their mechanical properties. Fire testing of the qualities of clay and brick-earths. Determination of ash, coke and sulphur in solid fuels. Determination of the calorific power of fuels. Determination of furnace temperatures by some form of pyrometer.

Testing of Materials.—Mechanical testing of cement, lime, brick, stone, timber and metals.

APPLIED PHYSICS.

For Candidates in Civil Engineering and Mining Engineering.

The theory of the experiments on Practical Engineering Physics and—

Pumps. Production of low temperatures; refrigerating machinery. Optical instruments. The principles and applications of photography. Röntgen and Becquerel rays. The principles of telegraphy and telephony; wireless telegraphy. Electric bells and indicators. Lightning conductors. Dynamo-electric machinery, direct and alternate, monophase and polyphase. Types of armatures and field-magnets. Reaction of armature and field motors. Efficiency of generators and motors; causes of loss of electric energy. Transmission of electric energy; comparison with other systems of transmission of energy. Transformers. Accumulators. Electric lighting systems. Electric welding. Electric depositions of metals.

PRACTICAL ENGINEERING PHYSICS.

For Candidates in all Branches.

Comparison of lengths. Determination of cross-sections and volumes. Specific gravity of solids and liquids. Testing of

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spirit levels. Young's modulus: by extensometer and by bending. Young's modulus of wires. Modulus of rigidity: static and kinetic methods. Co-efficient of torsional elasticity. Moments of Inertia. Atwood's Machine. The ballistic balance and the ballistic pendulum. Experiments with the physical pendulum. Composition of moments. Co-efficients of friction. Efficiency of wheel and axle, of the crab winch, of the differential pulley, and of a system of pulleys. Efficiency of the screw-jack and the hydraulic jack. Determination of small intervals of time. Harmonic motion. Co-efficients of expansion of solids. Pyrometric measurements. Influence of temperature upon Young's modulus, on thermal conductivity, on the colour of pigments, and on the magnetic properties of iron. Heats of combustion. Mechanical equivalent of heat.

Photometric measurements; intensity of emission and illumination.

Magnetic elements. Tracing of B. H. curves. Exploration of magnetic fields. Characteristic and magnetisation curves of dynamos. Efficiency of dynamos and motors. Measurement of co-efficients of self-induction. Fault-testing in electric circuits. Testing of lightning conductors.

ENGINEERING.

Applied Mechanics.

For all Candidates.

Definitions.

Elasticity.—Plasticity and rigidity. Stress, its nature and intensity. Tensile, compressive, and shearing stresses. Positive and negative senses of a stress. Stresses of uniform and variable intensities. Ultimate strength. Factor of safety.

Tension.

Simple tension.—Work done in stretching a rod. Thin pipes under internal fluid pressure Strength of prismatic solids under tensile stress when the resultant of applied forces does not coincide with the axis of the solid. Safe tensile co-efficients of various materials.

Compression.

Classification of bars or pillars under compression:—

Very short pillars, short pillars, long pillars, very long pillars. Methods of failure of these classes of pillars. Rondolet's, Hodgkinson's and Gordon's formulæ. Euler's formula. Fairbairn's formula for collapsing of tubes under fluid pressure. General

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remarks on the applicability of the above formulæ. Safe compressive co-efficients of materials usually subjected to a compressive stress : impact, pile driving.

Transverse Strain.

Proof that the stress at each point varies as its distance from the neutral axis.

Determination of the position of the neutral axis.

Determination of the moment of resistance.

Calculation of moments of inertia of ordinary sections used in engineering construction.

Flanged girders :—Appproximate and accurate methods.

Proportion of I beams for equal strength.

Beams of uniform strength.

Bending moments and shearing forces.—(Treated graphically and analytically.)

Cantilever under single load at free end.

Cantilever under uniformly distributed load.

Cantilever under uniformly distributed load, and one or more detached loads.

Beams supported at the ends and loaded with detached loads at any point.

Beams supported at the ends and loaded uniformly.

Beams supported at the ends and loaded uniformly, and also with one or more detached loads.

Beams supported at the ends and loaded with a single detached moving load.

Beams supported at the ends supporting an uniformly distributed moving load of length less than the span.

Beams supported at the ends, supporting an uniformly distributed moving load of length greater than the span.

Beams supported at the ends and loaded at intermediate points. —Conversion of the detached loads into equivalent uniformly distributed load.

Statics of Structures.

Framework loaded at the joints.

Triangular frames.—Diagram of forces for a single triangular frame. Triangular trusses. Cranes and derricks. Sheer-legs and tripods. Effect of the tension of the chain in cranes.

Incomplete frames.—Preliminary ideas. Simple trapezoidal or queen polst truss. General case of a furnicular polygon under a vertical load. Suspension chains.

Compound frames—Compound triangular frames for bridge trusses. Roof trusses in timber. Queen truss for large iron roofs. Diagram of forces in general.

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Framework girders.—Warren girders under various loads. N trusses. Bowstring girders.

Girders with redundant bars.—Lattice girders, flanged beams.

Deflection of Beams.

Deflection due to the maximum bending moment. General equation of deflection curve. Elementary cases of deflection and slope. Beams propped in the middle. Stiffness of beams. Stiffest beam that can be cut from a circular log.

Shearing.

Distinction between tangential stress and normal stress. Equality of tangential stress on planes at right angles. Tangential stress equivalent to a pair of equal and opposite normal stresses. Web of a beam of I section. Method of computing the intensity of the shearing stress at any point in a bent solid.

Resistance of Prismatic Solids to Simple Torsion.

Explanation of the phenomena of simple torsion.

A circular section, solid or hollow, most favourable form of prismatic solid for resistance to torsion.

Twisting moment. The limiting intensity of the resistance to torsion is that of the shearing stress.

Investigation of the resistance of a circular prism to torsion round its mean fibre.

The strength of axles subject to simple torsion. Values of the limiting intensity of working resistance to simple torsion for different materials.

Diameter of a shaft to transmit a given power.

Blockwork Structures.

Stability at a plane joint. Stability of a series of blocks. Centres of pressure or resistance. Line, polygon and curve of pressures. Line of resistance, or polygon of centres of pressures. Moment of stability.

Retaining Walls.

Theory of earth pressure. Angle of repose of different soils. Walls supporting a bank of earth with horizontal surface. Surcharged walls. Graphic methods of solution. Determination of the centre of pressure on any joint of a wall supporting a load of earth at its back. Maximum intensity of stress at any joint in a retaining wall. Minimum intensity of pressure. Tensile stress at a joint. Effect of cohesion of

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mortar. Connection between maximum intensity of pressure on foundation course and power of resistance of earth foundation. Methods of equalising intensity of stress on foundation courses.

Masonry Arches.

Definitions. Curve of pressures and line of resistance. Conditions of stability. Treatment of the weight of loads of different densities. Graphic process of determining the stability and resistance of any proposed arch by drawing the line of resistance. Depth of keystone.

Stability and Resistance of Abutments and piers.

Graphic process of determining the position of resultant pressure on any joint of an abutment. Design of piers.

Stability of foundations of structures in masonry and brickwork.

HYDRAULICS.

For all Candidates.

General Principles.

Velocity and volume of flow. Principle of continuity. Flow in a stream. Steady and varying motion of streams. Fluid acting on piston. Theorem of Bernouilli. Hydraulic head.

The Flow of Liquids through Orifices.

Application of the Theorem of Bernouilli. Velocity of flow due to given head. Co-efficient of velocity. Co-efficient of contraction. Co-efficient of discharge. Co-efficient of resistance. Connection between co-efficien s of velocity and resistance. Discharge from large rectangular orifices. Borda's mouthpiece. Co-efficient of contraction for Borda's mouth-piece obtained theoretically. Incomplete contraction. Cylindrical and con cal mouthpieces. Flow over notches. Triangular notches. Velocity of approach. Application of resul s to measurement of flow in streams. Francis' formula. Discha ge of measured quantities of water for irrigation purposes. Italian and Spanish modules. Other forms of apparatus answerin the same purpose. Discharge under varying head. Jet pump. Separating weirs.

The Flow of Liquids in Pipes.

Laws of friction between liquids and surfaces Froude's and Unwin's experiments. Loss of head due to friction in pipes.

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Hydraulic mean depth. Variation of co-efficient with velocity and diameter. Darcy's formula. Hydraulic gradient. Ordinary computations of size of pipes and volume of discharge. Loss of head due to bends, elbows, enlargements, etc.

Movements of Water in Canals and Rivers.

Mean velocity corresponding to given gradient. Variation of the co-efficient. Velocity at different parts of the section of the stream. Mean velocity in terms of surface and bottom velocity. Ratio of mean to maximum velocity. Forms of section of channel, circular, trapezoidal, egg-profile. Most economical section of channel with given side-slopes. Form of section for a constant velocity with varying discharge.

Impulse and Reaction of Water.

Pressure of a jet on a plane surface, fixed or moving. Energy communicated to the moving surface and efficiency of jet. Velocity of surface for maximum efficiency. Resultant pressure on curved surface, direct impulse and reaction. Condition to avoid loss by shock when jet is received. Condition for least loss of kinetic energy when jet is discharged.

IRRIGATION AND SANITARY ENGINEERING.

For Candidates in Civil Engineering.

Well irrigation, Canal irrigation, Inundation canals, Permanent canals, Reservoirs, Distribution of water, Tank irrigation, River inundation and river improvement. Municipal water-supply. Sources of water. Quality and quantity of water, selecting sample for analysis and bacteriological examination. Collection of water—from springs, from wells, from tanks, from rivers. Purification of water. Raising and Distribution of water. Intermittent and constant supply.

Drainage and sewerage, surfaces, sewers, flushing, house drainage, urinals and latrines, disposal of sewage.

ROADS AND RAILWAYS.

For Candidates in Civil Engineering.

Different classes of roads. Survey, construction, and maintenance of metalled and unmetalled roads. Hill Road. Bridges and culverts.

Survey, Location, and Preparation of Railway Project. Construction of Formation and Permanent-way. Tunnels and Bridges. Simple Railway appliances. Rolling Stock.

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ENGINES AND MACHINERY.

Part I (*for all candidates*) covers the course generally.

Part II (*for candidates in Mechanical and Electrical Engineering*) will comprise a more detailed and special knowledge of the following subjects :

ENGINES.

Boilers.—Heating value of fuels and mechanical equivalent. Conditions for economical combustion.

Various types of Boiler : their construction and strength. Evaporative power. Management. Fittings. Piping. Feed pumps. Economisers. Superheaters. Boiler trials.

Steam Engines.—Expansion of steam. Steam consumption. Condensation in cylinder. Steam jackets. The Indicator and its uses. Valves and valve gearing. Reciprocating and Turbine Engines. Compounding. Governing. Condensers. Engine Tests.

Internal Combustion Engines.—Fuels used. Principles of action and construction of typical Engines. Ignition. Governing. Starting. Working. Testing.

HYDRAULIC AND PNEUMATIC ENGINES.

Details of Machinery.

Bolts. Nuts. Keys and Cotters. Journals. Crankpins. Pivot and collar. Bearings. Axles. Shafting and couplings. Gearing.

THEORY OF MACHINES.

For Candidates in Mechanical, and Electrical Engineering.

Types of Mechanism. Virtual centres. Velocity and acceleration diagrams. Gearing. Valve Gearing. Friction. Crank effort. Inertia of moving parts. Balancing. Governors. Fly-wheels. Dynamometers.

ELECTRICAL ENGINEERING.

Part I (*for candidates in Mechanical, Electrical and Mining Engineering*) covers the course generally.

Part II (*for candidates in Mechanical and Electrical Engrineeing*) will comprise a more detailed and special knowledge of the following subjects :—

The principles and practice of electric lighting, power, distribution and traction including wiring, cables, generators, motors, converters, transformers, accumulators, switchboards, lamps, and other apparatus in modern use.

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Methods of testing used by Engineers.
Electrical machine design.
The Principles of Telegraphy and Telephony.

MINING.

For Candidates in Mining Engineering only.

Part I.

Geology applied to Mining.

Boring by hand and power machines.

Sinking and lining shafts; various methods employed in special cases.

Systems of haulage, underground and aboveground; aerial ropeways.

Hoisting; headgear; ropes; safety appliances.

Mining legislation.

Methods of working coal; shaft-pillars, preliminary work and various methods of working the seams. Special reference to Thick Coal working, as practised in England and different parts of the world.

Shot-firing; coal-cutting by machinery.

Surface subsidence and undersea working.

Timbering and other supports.

Coal mine plans and sections; connecting surface and under ground surveys.

Prospecting for, and methods of working, mineral veins.

Alluvial mining and open workings.

Hydraulic mining; dredging for gold; ore-beds and deep-leads; overhand and underhand stopping. Hand and powder; drilling; blasting; timbering.

Metal mine plans.

Part II.

Descriptive Mineralogy; physical properties of minerals; description of various ores and fuels; methods of determination.

Prospecting operations.

Drainage of mines; adit levels; pumping machinery; dams; boring against old workings.

Ventilation of mines; natural and artificial ventilation; splitting and regulating; air currents; types of fans; water-gauge and anemometer.

Power application in a mine; discussion of relative merits of steam, water, compressed air, electricity, and oil as sources of applied power.

Description of gases found in coal mines; colliery explosions; safety lamps; instruments for detecting firedamp; treatment of men overcome by foul air.

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Arrangements of surface works at a colliery; sorting and screening coals, coalwashing; briquette making; coking and bye-products.

Surface works of metal mines. Sorting, crushing, sizing, and concentration of various ores. Modern ore-dressing machinery, and slime tables.

Special reference to treatment of gold, silver, copper, lead, and zinc.

Cyanide and chlorine treatment of slimes.

DRAWING AND DESIGN.

The written test (*for candidates in Civil Engineering*) will be confined to the preparation of detailed drawings from notes and sketches, as applied to Civil Engineering and Architecture: (*for candidates in Mechanical, Electrical and Mining Engineering*) it will be confined to the preparation of detailed Drawings and Designs from notes and sketches as applied to Machinery and Structures relating to these branches.

Practical Test.—(*For all candidates.*) Attested Drawings and Designs for Engineering Works and Buildings will be submitted for examination. Marks will be allotted for fieldwork and calculations.

8. The subjects and marks shall be distributed as follows:—

CIVIL ENGINEERING.

I.	*Mathematics*—		
	1. Pure Mathematics	.. 200	
	2. Mixed Mathematics	.. 300	
		——	500
II.	*Science*—		
	3. Geology and Mineralogy	.. 200	
	4. Metallurgy and testing of Materials	.. 200	
	5. Applied Physics	.. 200	
	6. Practical Engineering Physics	.. 400	
		——	1,000
III.	*Engineering*—		
	7. Roads and Railway	.. 400	
	8. Irrigation and Sanitary Engineering	.. 400	
	9. Applied Mechanics	.. 400	
	10. Hydraulics	.. 400	
	11. Engines and Machinery, Part I	.. 400	
		——	2,000
IV.	*Drawing and Design*—		
	12. Attested Drawings and Designs for Engineering Works and Buildings	.. 700	
	13. Theoretical paper	.. 200	900
	Total	.. ..	4,400

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MECHANICAL AND ELECTRICAL ENGINEERING.

I. *Mathematics*—		
Pure Mathematics	.. 200	
Mixed Mathematics	.. 300	
	——	500
II. *Science*—		
Metallurgy and Testing of Materials	.. 200	
Practical Engineering Physics	.. 400	
	——	600
III. *Engineering*—		
Applied Mechanics and Hydraulics	.. 400	
Engines and Machinery (Part I)	.. 400	
„ „ (Part II)	.. 400	
Theory of Machines	.. 400	
Electrical Engineering (Part I)	.. 400	
„ „ (Part II)	.. 400	
	——	2,400
IV. *Drawing and Design*—		
Theoretical Paper	.. 200	
Attested Drawings and Designs for Engineering Works and Buildings	.. 700	900
Total	.. ..	4,400

MINING ENGINEERING.

I. *Mathematics*—		
Pure Mathematics	.. 200	
Mixed Mathematics	.. 300	
	——	500
II. *Science*—		
Geology and Mineralogy	.. 200	
Metallurgy, etc.	.. 200	
Applied Physics	.. 200	
Practical Engineering Physics	.. 400	
	——	1,000
III. *Engineering*—		
Applied Mechanics and Hydraulics	.. 400	
Engines and Machinery, Part I	.. 400	
Electrical Engineering, Part I	.. 400	
Mining, Part I	.. 400	
Mining, Part II	.. 400	
	——	2,000
IV. *Drawing and Design*—		
Theoretical Paper	.. 200	
Attested Drawings and Designs for Engineering Works and Buildings	.. 700	900
Total	.. ..	4,400

9. The pass marks for the B.E. Examination shall be one-third in each group of subjects and half of the aggregate for a Second Class. Two-thirds shall be required for a First Class. The

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candidate who is placed first in the first class in each branch shall receive a Gold Medal and a prize of books to the value of Rs. 200.

10. Any candidate who has failed in one subject only, and by not more than 5 per cent. of the full marks in that subject, and has shown merit by gaining 60 per cent. or more in the aggregate of the marks of the examination, shall be allowed to pass.

11. If the Examiners are of opinion that in the case of any candidate not covered by the preceding Regulation, consideration ought to be allowed by reason of his high proficiency in a particular subject or in the aggregate, they shall report the case to the Syndicate, and the Syndicate may pass such candidate.

CHAPTER LIII.

DOCTOR OF SCIENCE (ENGINEERING).

1. Any Bachelor of Engineering of the University of Calcutta may offer himself as a candidate for the Degree of Doctor of Science (Engineering).

2. Every candidate shall state in his application the special subject within the purview of the Regulations for the Degree of Bachelor of Engineering, upon a knowledge of which he rests his qualifications for the Doctorate, and shall, with the application, transmit three copies, printed or typewritten, of a thesis that he has composed, treating scientifically some special portion of the subject so stated, embodying the result of research or showing evidence of his own work, whether based on the discovery of new facts observed by himself, or of new relations of facts observed by others, or tending generally to advance engineering knowledge or practice. A thesis on a new application of scientific principles or an investigation of methods or materials of practical importance in some branch of engineering, will be taken to comply with the requirements. The candidate shall indicate generally in a preface to his thesis and specially in notes, the sources from which his information is taken, the extent to which he has availed himself of the work of others, and the portions of the thesis which he claims as original; he shall further state whether his research has been conducted independently, under advice, or in co-operation with others, and in what respects his investigations appear to him to advance engineering knowledge or practice.

3. Every candidate may also forward with his application three printed copies of any original contribution or contributions to the advancement of engineering knowledge or practice, or of

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any cognate branch of science, which may have been published by him independently or conjointly, and upon which he relies in support of his candidature.

4. No application shall be entertained unless two Members of the Faculty of Engineering or two Doctors of Science (Engineering) shall have testified, to the satisfaction of the Syndicate, that since graduating as Bachelor of Engineering, the candidate has practised his profession with repute for five years, and that in habits and character, he is a fit and proper person for the Degree of Doctor.

5. Every candidate shall forward with his application a fee of Rs. 100. No candidate who fails to pass or present himself for examination shall be entitled to claim a refund of the fee.

6. The thesis mentioned in paragraph 2 and the original contributions, if any, mentioned in paragraph 3, shall be referred by the Syndicate to a Board consisting of the Dean of the Faculty of Engineering and two other persons.

7. If the thesis is approved by the Board, and if the candidate has obtained a first class at the examination for the Degree of Bachelor of Engineering, he shall not be required to submit to any further written examination; but he may be required by the Board at their discretion, to appear before them to be tested orally or practically, or by both these methods with reference to the thesis, and the special subject selected by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the oral and practical examinations, if any; and if the Syndicate, upon the report, consider the candidate worthy of the Degree of Doctor of Science (Engineering), they shall cause his name to be published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of Engineering knowledge and practice and of Science generally.

8. If the candidate is a person who has obtained a second class at the examination for the Degree of Bachelor of Engineering, and if his thesis is approved by the Board, he shall be required to submit to a written examination.

Two papers of three hours each shall be set, one upon the special subject mentioned in the application of the candidate, and the other upon the subject of the thesis. The candidate may also be required by the Board, at their discretion, to appear before them to be tested orally or practically or by both these methods, with reference to the thesis and the special subject professed by him. The Board shall report to the Syndicate the result of the examination of the thesis, and of the written examination, and also of the oral and practical examinations, if any; and if the Syndicate, upon the report, consider the candidate worthy of the Degree of Doctor of Science (Engineering), they shall cause his name to be

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published, with the subject of his thesis, and the titles of his published contributions (if any) to the advancement of Engineering knowledge and practice and of Science generally.

9. In the case of a candidate falling under the preceding section if the Board, upon an examination of his thesis and of his original contribution or contributions to the advancement of Engineering knowledge and practice and of Science generally, hold the same to be generally or specifically of such special excellence as to justify the exemption of the candidate from the wri'ten examination, he may be so exempted by the Syndicate, provided that the report of the Board shall set forth the fact and the grounds of such exemption.

10. A diploma under the seal of the University, and signed by the Vice-Chancellor shall be delivered at the next convocation for conferring degrees to each candidate who has qualified for the degree.

11. Every candidate shall be at liberty to publish his thesis, and the thesis of every successful candidate shall be published by the University with the inscription: "Thesis approved for the Degree of Doctor of Science (Engineering) in the University of Calcutta."

CHAPTER LIV.

ACADEMICAL COSTUME.

Graduates shall wear a European dress with a College Cap, or a Chapkan and Trousers with a Shawl Pagree and Black Taz.

They also shall wear Gowns and Hoods for the several degrees as described below:—

For the Degree of B.A.

A black silk or stuff Gown. The Hood shall be of black silk or stuff, edged on the inside with a border of dark-blue silk.

For the Degree of B.Sc.

A black silk or stuff Gown. The Hood shall be of black silk or stuff, edged on the inside with a border of light blue silk.

For the Degree of B.L.

A black silk or stuff Gown. The Hood shall be of black silk or stuff, edged on the inside with a border of green silk.

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For the Degree of M.B.

A black silk or stuff Gown. The Hood shall be of black silk or stuff, edged on the inside with a border of scarlet silk.

For the Degree of B.E.

A black silk or stuff Gown. The Hood shall be of black silk or stuff, edged on the inside with a border of orange-coloured silk.

For the Degree of B.T.

A black silk or stuff Gown. The Hood shall be of black silk or stuff, edged on the inside with a border of purple coloured silk.

For the Degree of Master in the Faculties of Arts, Science and Law.

A black silk or stuff Gown. The Hood shall be of black silk or stuff, with a lining of silk corresponding in colour with the inside border of the Hood for Bachelors of the Faculty.

For the Degree of Doctor in any Faculty and for the Degrees of Master in Surgery and Master in Obstetrics.

A deep purple silk Gown with full sleeves. The Hood shall be of scarlet silk, with a lining of satin corresponding in colour with the inside border of the Hood for the Bachelors of the Faculties.

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Appendix A.

MATRICULATION EXAMINATION.

I certify that aged on duly passed the Matriculation Examination held in the month of 19 , and was placed in the Division.

University of Calcutta ;
The 19 .

Registrar.

INTERMEDIATE EXAMINATION IN ARTS (OR SCIENCE).

I certify that duly passed the Intermediate Examination in Arts (or Science) held in the month of 19 , and was placed in the Division.

University of Calcutta ;
The 19 .

Registrar.

BACHELOR OF ARTS (OR SCIENCE).

Pass Diploma.

This is to certify that obtained the degree of Bachelor of Arts in this University at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 .

Vice-Chancellor.

BACHELOR OF ARTS (OR SCIENCE).

Diploma for those who have passed "with distinction."

This is to certify that obtained the degree of Bachelor of Arts (or Science) in this University with distinction at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 .

Vice-Chancellor.

BACHELOR OF ARTS (OR SCIENCE).

Honours Diploma.

This is to certify that obtained the degree of Bachelor of Arts (or Science) with Honours in this University at the Annual Examination in the year 19 , and that he was placed in the Class in

University of Calcutta ;
The 19 .

Vice-Chancellor.

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MASTER OF ARTS (OR SCIENCE).

This is to certify that obtained the degree of Master of Arts (or Science) in this University at the Annual Examination in the year 19 , the special branch in which he was examined having been and that he was placed in the Class.

University of Calcutta ;
The 19 .

Vice-Chancellor.

DOCTOR OF PHILOSOPHY.

This is to certify that obtained the degree of Doctor of Philosophy in in this University at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 .

Vice-Chancellor.

DOCTOR OF SCIENCE.

This is to certify that obtained the degree of Doctor of Science in in this University at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 .

Vice-Chancellor.

LICENTIATE IN TEACHING.

This is to certify that passed the Examination for a Licentiate in Teaching at the Annual Examination in the year 19 , and that he was placed in the Division.

University of Calcutta ;
The 19 .

Registrar.

BACHELOR OF TEACHING.

Diploma.

This is to certify that obtained the degree of Bachelor of Teaching in this University at the Annual Examination in the year 19 .

University of Calcutta :
The 19 .

Vice-Chancellor.

BACHELOR OF LAW.

Diploma.

This is to certify that obtained the degree of Bachelor of Law in this University at the Annual Examination in the year 19 , and that he was placed in the Division.

University of Calcutta ;
The 19 .

Vice-Chancellor.

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MASTER OF LAW.

This is to certify that obtained the degree of Master of Law in this University at the Annual Examination in the year 19 , and that he was placed in the Class.

University of Calcutta ;
The 19 , } *Vice-Chancellor.*

DOCTOR OF LAW.

This is to certify that obtained the degree of Doctor of Law in this University at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 . } *Vice-Chancellor.*

PRELIMINARY SCIENTIFIC EXAMINATION FOR THE DEGREE OF M.B.

This is to certify that duly passed the Preliminary Scientific Examination for the degree of M.B. at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 . } *Registrar.*

FIRST M.B. EXAMINATION.

This is to certify that duly passed the First Examination for the degree of M.B. at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 . } *Registrar.*

FIRST M.B. EXAMINATION.

Certificate for those who have passed with Honours.

This is to certify that duly passed the First Examination for the degree of M.B. with Honours at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 . } *Registrar.*

FINAL M.B. EXAMINATION.

Diploma.

We, the Vice-Chancellor, the President of the Faculty of Medicine, and the Registrar of the University of Calcutta, do hereby make known that in the year 19 has been admitted to the Degree of Bachelor of Medicine, he having been first certified by duly appointed Examiners to be qualified to receive the same. We do hereby declare that

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he is competent and authorised to practise Medicine, Surgery and Midwifery.

Vice-Chancellor.

President of the Faculty of Medicine.

Registrar.

FINAL M.B. EXAMINATION.

Diploma for those who have passed with Honours.

We, the Vice-Chancellor, the President of the Faculty of Medicine, and the Registrar of the University of Calcutta, do hereby make known that in the year 19 has been admitted to the Degree of Bachelor of Medicine, he having been first certified by duly appointed Examiners to be qualified to receive the same. He obtained Honours in We do hereby declare that he is competent and authorised to practise Medicine, Surgery and Midwifery.

Vice-Chancellor.

President of the Faculty of Medicine.

Registrar.

DOCTOR OR MASTER IN THE FACULTY OF MEDICINE.

We, the Vice-Chancellor, the President of the Faculty of Medicine, and the Registrar of the University of Calcutta, do hereby make known that in the year 19 . has been admitted to the degree of { Doctor of Medicine / Master of Surgery / Master of Obstetrics } he having been first certified by duly appointed Examiners to be qualified to receive the same.

Vice-Chancellor.

President of the Faculty of Medicine.

Registrar.

DIPLOMA IN PUBLIC HEALTH.

We, the Vice-Chancellor, the President of the Faculty of Medicine, and the Registrar of the University of Calcutta, do hereby make known that in the year 19 has been granted the Diploma of Public Health, he having been first certified by duly appointed Examiners to be qualified to receive the same.

Vice-Chancellor.

President of the Faculty of Medicine.

Registrar.

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INTERMEDIATE EXAMINATION IN ENGINEERING.

I certify that duly passed the Intermediate Examination in Engineering held in the month of 19 .

University of Calcutta ;
The 19 *Registrar.*

BACHELOR OF ENGINEERING.

Diploma.

This is to certify that obtained the degree of Bachelor of Engineering in this University at the Annual Examination in the year 19 , the special branch in which he was examined having been and that he was placed in the Class.

University of Calcutta ;
The 19 . *Vice-Chancellor.*

DOCTOR OF SCIENCE (ENGINEERING).

This is to certify that obtained the degree of Doctor of Science (Engineering) in this University at the Annual Examination in the year 19 ,

University of Calcutta ;
The 19 . *Vice-Chancellor.*

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Appendix B.

PHYSICS.

A.—Intermediate Standard.

(a) List of apparatus for practical class of 20 students.

The figures in brackets indicate the number of sets required in each case.

Mechanics :—

Vernier (3).
Glass scales and plates (3).
Protractor (3).
Inclined plane (2).
Friction apparatus (2).
Pendulum and stand (3).
Balance weighing to 1 cm. and weights (3).
Hydrometer with jar and weights (3).
Apparatus for Boyle's law (2).
Barometer (1).

—Approximate cost, Rs. 325.

Heat :—

Apparatus for determining fixed points of thermometers (3).
Apparatus for specific heat (3).
Apparatus for latent heat (3).

—Approximate cost, Rs. 65.

Light :—

Drawing board and instruments (3).
Plane and concave mirrors (3).
Prism (3).
Lens (3).
Glass cube (3).
Sighting rod (3).
Slit (3).
Screen (3).
Simple photometer (3).

—Approximate cost, Rs. 110.

Magnetism :—

Magnet (3).
Magnetoscope (3).
Small compass (3).
Steel and iron wire.

—Approximate cost, Rs. 25.

Electrostatics :—

Electroscope (3).
Electrophorus (3).
Glass rod (3).

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Ebonite rod (3).
Rubbers.
Insulated sphere (3).

—Approximate cost, Rs. 45.

Current Electricity :—

Leclanché cell (3).
Daniell cell (3).
Compass needle and stand (3).
Astatic galvanometer (2).
Tangent galvanometer (2).
Wheatstone's Bridge (2).
Resistance coils.

—Approximate cost, Rs. 150.

(*b*) *List of apparatus for lecture purpose.*

Miscellaneous (partly for practical class).
Strong adjustable table.
Adjustable stands.
Bunsen's universal holder.
Ordinary wooden holders.
Set of wooden cubes.
Set of wooden cylinders.
Set of wooden discs.
Two Bunsen burners.
Three spirit lamps.
Glass flasks.
Glass burettes.
Glass funnels.
Glass beakers.
Cylindrical glass measures.
Glass tubing.
Indian rubber tubing.
Wire gauze, etc., etc.

—Approximate cost, Rs. 100.

General ideas :—

Apparatus for illustrating the parallelogram of forces.
Inclined plane.
Pulleys.
Apparatus for demonstrating the laws of levers.
Model of screw and nut.
Atwood's machine.
Centrifugal machine.
Spring balance.
Pendulum for Foucault's experiment.
Model of hydrostatic press.
Apparatus to show the upward pressure of liquids.
Communicating tubes.
Apparatus for demonstrating the principle of Archimedes.
Hydrostatic balance.
Hydrometers.
Barker's mill.
Hydraulic ram of glass.
Magdeburg hemispheres.
Double globe for showing expansion of air.
Cylinder for showing the fall of bodies in a vacuum
Baroscope.

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Glass receivers.
Siphons.
Barometer tube.
Vacuum gauge.
Hero's fountain.
Model of a lifting pump.
Model of a force pump.
Model of a fire engine.

—Approximate cost, Rs. 500.

Heat :—

Gravesande's ball and ring.
Pyrometer.
Apparatus for showing expansion of liquid bodies with heat.
Thermometers.
Air-bulb thermometer.
Boyle's law apparatus with air-bulb attachment.
Hope's apparatus.
Weight thermometer.
Apparatus for showing the elastic force of different vapours.
Apparatus for determining the boiling point of water,
Daniell's hygrometer.
Dine's hygrometer.
Simple apparatus for showing absorption and radiation of heat (Ritchie).
Leslie's cube.
Ingenhousz's apparatus.
Apparatus for showing the conductivity of liquids.
Apparatus for showing the convection of heat.
Leslie's differential thermometer.
Whirling table for boiling water by friction.
Model of a steam-engine.

—Approximate cost, Rs. 250.

Light :—

Heliostat.
Attachment for same with adjustable slit and diaphragm.
Demonstration photometer.
Convex and concave lenses, mounted and unmounted.
Convex and concave mirrors.
Apparatus for showing laws of reflexion.
Angular mirror on graduated base.
Apparatus for showing refraction of rays in liquids.
Camera obscura.
Glass prisms.
Disc with spectral colours.
Carbon bisulphide prism.
Projection screens.
Model telescope and microscope.

—Approximate cost, Rs. 250.

Magnetism :—

Two large bar magnets.
One large horse-shoe magnet with armature.
Magnetic needle (large size) with agate centre and brass stand.
Dip needle.
Compass (larger size).
Steel knitting needles.

—Approximate cost, Rs. 25.

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Frictional Electricity :—

Rods of sealing wax, sulphur, and guttapercha.
Catskin and fox-tail rubbers.
One rod, half glass and half brass.
Pith ball double pendulum.
Simple illustrative apparatus such as electric wire, electric chimes, etc.
Gold leaf electroscope (larger size) with condenser.
Insulating stool.
Discharger.
Faraday's ice pails.
Faraday's butterfly net.
Leyden jar with movable coatings.
Two ordinary Leyden jars.
Wire cage.
Hollow brass sphere on insulating stand.
Proof plane.
Distribution apparatus.
Electrophorus.
Frictional machine.
Voss's machine.

—Approximate cost, Rs. 250.

Dynamic Electricity :—

Various forms of cells.
Oersted's apparatus.
Lecture galvanometer.
Mirror galvanometer.
Bichromate of potash or other battery for lecture experiments.
Binding screws and clamps.
Morse Key.
Commutator.
Apparatus for producing heat by an electric current.
Water voltameter.
Copper voltameter.
Ampere's apparatus for showing the action of magnets on currents and of currents on currents.
Electromagnets.
Apparatus for illustrating induced currents.
Small induction coil.

—Approximate cost, Rs. 250.

Sound :—

Bellows with four valves.
Organ pipe wth centre stop.
Organ pipe with movable piston.
Tuning forks with resonance box. Monochord.
Wave apparatus.
Sarvart's toothed wheel.
Siren.

—Approximate cost, Rs. 190.

B.—B.A. or B.Sc. Standard.

(a) *List of apparatus for practical class of not more than* 15 *students (in addition to that for Intermediate course).*

Workshop tools.
Two Callipers.

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Two Screw-gauges.
Two Spherometers.
Three Sensitive balances in cases with sets of weights.
U-tube for relative densities.
Specific gravity bottles.
Hare's apparatus.
Apparatus for determining modulus of elasticity.
Pendulum for determining intensity of gravity.
Reversible pendulum.
Apparatus for measuring co efficient of linear expansion.
Apparatus for determining co-efficient of expansion of a gas.
Apparatus for determining co-efficient of increase of pressure.
Additional Bunsen burners.
Specific heat apparatus.
Bunsen's ice calorimeter.
Latent heat apparatus.
Regnault's hygrometer.
Wet and dry bulb thermometer.
Apparatus for determining the velocity of sound by resonance.
Optical and photometric bench with accessories.
Spectrometer.
Spectroscope.
Deflection magnetometer.
Vibration magnetometer.
Spring magnetometer.
Dip needle for accurate measurement.
Tangent galvanometer.
Cheap post office resistance box.
Set of resistance coils.
Simple potentiometer.
Air pump.
Copper wire.

—Approximate cost, Rs. 1,200.

Additional apparatus for Honours Course:—

Apparatus for determining Young's modulus for bending.
Apparatus for measurng surface tension.
Apparatus for determining moments of inertia.
Apparatus for determining the co-efficient of expansion of liquids.
Dumas' apparatus for vapour density.
Victor Meyer's ditto.
Kundt's tube.
Small microscope.
Diffraction gratings.
Joule's calorimeter.
Silver voltameter.
D'Arsonval galvanometer and scale.
Additional resistance box.
Platinum wires and stand for spetroscopic work. Also reagent for same.

—Approximate cost, Rs. 400.

(*b*) *Lecture apparatus.*

Miscellaneous:—

Large projection lantern.
Apparatus for projection of horizontal objects.

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Large projection screen.
Bunsen's universal holder.
Water bath.

—Approximate cost, Rs. 250.

General Ideas :—

Apparatus for the production of stationary waves.
Apparatus showing the interference of waves.
Soap film frames.
Capillary tubes with stand.
Capillary plates.
Cohesion plates for suspension from a balance.

—Approximate cost, Rs. 60.

Heat :—

Breguet's metal thermometer.
Joule's apparatus for showing contraction of a stretched India-rubber tube by heat.
Senarmont's apparatus for showing conductivity of crystals.
Right-angled bent glass tube for showing the circulation of water.
Davy's safety lamp.
Apparatus for showing the difference in the expansibility of various liquids.
Gay-Lussac's apparatus for proving Dalton's law.
Papin's digester.
Apparatus to show boiling at low pressure.
Wollaston's cryophorus.
Pulse glass.
Arrangement for melting an ice block by means of a loaded wire.
Melloni's apparatus for illustrating radiation, absorption and reflection of heat.

—Approximate cost, Rs. 400.

Light :—

Apparatus for showing total reflexion.
Right-angled crown glass prism.
Pair of achromatic prisms on stand.
Prism with adjustable angle for liquids on stand.
Three small direct vision spectroscopes.
Phosphorescent substances.
Model of the eye.
Stereoscope with pictures.
Absorption trough.
Two Prismatic troughs.
Chart of various spectra.
Fluorescent liquids.
Cubes of uranium and fluorspar.
Lantern slides illustrating various optical effects.
Model of sextant.
Small telescope.
Fresnel's mirror.
Fresnel's biprism.
Diaphragam with various apertures for showing diffraction.
Norrenberg's polariscope.
Set of preparations for use with the same.
Tourmaline tongs.
Rhomb of Iceland spar.
Newton's colour rings.
Nicol's prism.

—Approximate cost, Rs. 550.

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Sound :—

Burner for sensitive flames.
Glass bell on stand for showing nodes.
Chladni's plate.
Trevelyan rocker.
Chemical harmonicon.
Manometric jet.
Revolving mirror on stand.
Additional organ pipes.
Pipe with free reed.
Pipe with striking reed.
Set of resonators.
Interference tube.
Airy's double pendulum.
Chronographic tuning fork.
Small phonograph.
Telephone receiver.
Microphone.

—Approximate cost, Rs. 350.

Electricity and Magnetism :—

Condenser.
Additional illustrative apparatus in frictional electricity.
Voltaic pile.
Dry cells.
Storage cells.
Lecture-room ammeter.
Lecture-room voltmeter.
Simple galvanoplastic apparatus.
Large electro-magnet.
Morse telegraph.
Barlow's wheel.
Lecture apparatus for showing rotation of magnets and currents under electro-magnetic forces.
Arago's apparatus for showing induced currents.
Model of a Gramme ring.
Small dynamo with hand wheel.
Small model motor.
Induction coil giving 3 to 4 inch spark.
Vacuum tubes.
Crookes' tubes.
Seebeck's thermo-electrical apparatus.
Thermo-electric pile.

—Approximate cost, Rs. 675.

C.—M.A. OR M.SC. STANDARD.

For this standard there must be a complete collection of apparatus for advanced practical work.

(*a*) *Optics.*—The equipment of the optical room shall include instruments, for accurate measurement such as spectroscopes, spectrometers, polarimeters, optical bench, refractometers, reading microscopes, etc. Probable minimum cost, Rs. 3,000.

(*b*) *Electricity and magnetism.*—The electrical room shall be fitted with sensitive mirror galvanometers and there shall be an adequate supply of instruments for electrical and magnetic measurement, *i.e.*, resistance boxes, galvanometers, electrometers, magnetometers, standard resistances, standard capacities, standard cells, etc., besides auxiliary apparatus such

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as an induction coil with 8-10 inch spark, a powerful electromagnet, electric motors, etc. Probable minimum cost, Rs. 3,500.

An accumulator battery shall form part of the electric installation, if any.

(*c*) *Heat*—Additional apparatus for accurate work in calorimetry, thermometry, conduction, radiation, expansion, etc.—Probable minimum cost, Rs. 2,000.

(*d*) *General Physics and Sound.*—Additional apparatus for accurate work in elasticity, vapour, density, capillarity, fluid friction, etc., and sound.—Probable minimum cost, Rs. 1,500.

(*e*) Workshop equipment, including lathe.—Probable minimum cost, Rs. 350.

PHYSIOLOGY.

A.—Intermediate Standard.

(*a*) *List of apparatus, etc., for practical class of 24 students.*

Microscopes one doz.
Dissecting instruments and razors, etc.
Gas burners (Bunsen) 1½ doz.
Test tube stands, 1½ doz.
Retort stands with rings, etc., 1 doz.
Glass bottles, etc.
Thermometers, 1 doz.
Test tubes and glass beakers.
Glass flasks and measures.
Glass tubing and rods and funnels.
Porcelain crucibles, etc.
One balance.
One Microtome (Ice-freezing).
One Hæmocytometer (Zeiss).
One Hæmoglobinometer (Gower's).

—Approximate cost, Rs. 1,650.

(*b*) *List of apparatus and appliances for Lecture purpose.*

One Human Skeleton.
Set of 50 diagrams (3′ × 2′).
Ordinary apparatus and appliances for illustrating lectures on chemical Physiology.
One simple recording drum (with clock work).
One time-marker.
One muscle-lever myograph.
Two simple stands for ditto.
One induction coil.
Two electric keys.
One commutator,
Four bichromate cells.
Insulated wire 1 lb. (22 B. W. G.).
Muscle-weights 1 set.
One Sphygmograph.
One Marey's tambour.
One Marey's cardiograph.
One Model of eye (dissectible).
One Phakoscope.
One Model of ear (dissectible).
One Spectroscope (straight vision).

—Approximate cost, Rs. 850.

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B.—B.A. OR B.Sc. STANDARD.

(a) *List of apparatus, etc., for practical class of* 12 *students.*

Additional requirements :—

One Rocking Microtome.
Micrometers (eye piece and stage).
Three Doremus Ureometers.
One Chemical Balance.
One Embedding bath (Hearson's)
Three Tetanus springs (graduated).
One Hypodermic syringe.
One Mercury Pump for gas analysis.
Two Desiccators.
Three Soxhlet apparatus with Liebig condenser.
One Centrifugal machine.
One Water bath (copper).
One Air pump.

The following set of apparatus is required for every couple of students :—

One Recording drum.
One Simple muscle-lever.
One Crank myograph.
One Simple stand.
One Du Bois Reymond's induction coil.
Two Electric keys.
One Pohl's commutator.
One Simple rheocord.
Two Pairs of platinum electrodes.
One Bichromate cell.
One Muscle weights.
One Time-marker.
One Spectroscope (straight vision).
One Esbach's albuminometer.
One Urinometer.

—Approximate cost, Rs. 2,750.

(b) *List of apparatus, etc., for lecture purpose.*

Additional requirements :—

One Kronecker's perfusion canula.
One Rabbit holder.
One Adjustable simple stand.
One Tuning fork (on stand) making 10 D.V. per second.
One Tetanus spring (graduated).
One Metronome.
One Deprez chronograph.
Two pairs of nonpolarisable electrodes.
One pair of muscle forceps.
One Ophthalmoscope.
Two Electrodes (shielded) for deep nerves.
One Hill and Bernard's sphygmometer.
One Stromuhr (Ludwig's).
One Hurthle's membrane manometer.
One Ludwig's mercury manometer.
One Laryngoscope (with throat mirrors).

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One Fleischlp's hæmometer.
One Oliver's hæmocytometer.
One ,, hæmoglobinometer.
One Moist chamber.
One Onkometer, for kidney.
One Reflecting galvanometer.
One Shunt.
One Spring myograph.
One Spectroscope.
One Saccharimeter (polariscope).

—Approximate cost, Rs. 2,000.

C.—M.A. OR M.Sc. STANDARD.

PRACTICAL LABORATORY.

	Rs.
(a) *Histology* :— Approximate cost of equipment for 6 students ..	2,400
(b) *Chemical Physiology* :— Approximate cost of equipment for 6 students ..	1,800
(c) *Experimental Physiology* :— Approximate cost of equipment for 6 students ..	3,000
(d) *Galvanometer and Optical work* :— Approximate cost of equipment	1,200

BOTANY.

A.—INTERMEDIATE STANDARD.

(a) *Collections and Wall Diagrams* :—

Collection of microscopic slides.
Botanical Wall pictures (complete set).
Botanical models.
Physical Wall maps, Mercator's projection.
Physical Geography Wall Map of India.
Collections of diapositives.

—Approximate cost, Rs. 750.

Lecture-room apparatus.
Projection apparatus.
Screen.

—Approximate cost, Rs. 400.

List of apparatus for class of 24 students.

(c) *Practical Class* :—

Microscopes, 1 doz.
Dissecting instruments,
Cork-borers.
Crucible tongs, 4 in number.
Hempel's desiccator, 2 in number.
Two doz. drop-bottles.
Canada Balsam bottle, 1 doz.
Glass tubing.

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Glass rod.
Standard measures, of different capacities.
Graduated measures.
2 Rules, 1 meter long.
Mortars and pestles.
Pipettes.
Air-pump plate.
Pressure tubing.
Flasks of different capacities.
Funnels of different sizes.
Burners.
Rubber tubing.
Test tube.
Test-tube stands, holders, cleaners.
Thermometers.
Woulff's bottles.
Burettes.
Burette stands.
Three double belljars.
Stoppered belljars.
Beakers in nests.
Aspirators, 5 litres cap., three in number.
Corks.
Maps, 1 doz.
Draining rack.
Pieces of cork sheet, weighted.
Glass capsules.
Camel hair brushes.
Belljars for microscopes.
One Balance and weights.
Staining troughs.
Glass bones.
Filter paper.
Arc-indicator.
Stains and chemicals.
Flower-pot (Rs. 20).

—Approximate cost, Rs. 2,400.

B.—B.A. or B.Sc. Standard.

(*a*) *List of apparatus, etc., for practical class of* 12 *students.*

Additional requirements :—

One Rocking microtome.
One Embedding bath.
One Water bath (copper).
One Incubator.
Two Spectroscopes (direct vision).
Six Belljars with double walls.
One doz. Potash bulbs.
Half doz. Poroscope (Christiani's).
One Centrifugal machine.
Half doz. Bichromate cells.
Two doz. Porcelain trays.
Half doz. Thermometers.
Half doz. Pfeffer's apparatus (to show movement of gases in plants).

—Approximate cost, Rs. 600.

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4. *Apparatus and Appliances for lecture purpose.*

Additional requirements :—

Models and museum specimens.
One Nitrometer.
One Induction coil.
One Moll's apparatus (for experimenting on assimilation).
One Auxanometer.
One Clinostat.
One Potometer.

—Approximate cost, Rs. 750.

C.—M.A. OR M.SC. STANDARD.

PRACTICAL LABORATORY.

	Rs.
(a) *Histological work :—*	
Approximate cost of equipment of 6 students ..	2,400
(b) *Experimental Plant Physiology :—*	
Approximate cost of equipment for 6 students ..	3,000
(c) *Bacteriological work :—*	
Approximate cost of equipment for 6 students ..	600

ZOOLOGY.

A.—INTERMEDIATE STANDARD.

(a) *List of apparatus for practical class of 20 students :—*

Five Microscopes.
Dissecting instruments.
Twenty Troughs, fitted with cork, for dissecting small animals under water.
Twenty Dissecting trays.

—Approximate cost, Rs. 750.

(b) *List of apparatus for lecture purpose :—*

Set of one hundred diagrams.
Skeleton of vertebrates (types).
Museum specimens of invertebrates.

—Approximate cost, Rs. 1,300.

B.—B.A. OR B.SC. STANDARD.

(a) *List of apparatus for practical class :—*

Microscopes, 1 doz.
Slides, etc.
Dissecting troughs.
Dissecting trays.
Dissecting instruments.
One Rocking microtome.
One Embedding bath.
One Hearson's incubator.

—Approximate cost, Rs. 1,700.

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(*b*) *List of appliances for lecture purpose :—*

Additional :—

One hundred diagrams.
Skeletons and dissected specimens and models of vertebrates.
Museum specimens of invertebrates.
Microscopical specimens.

—Approximate cost, Rs. 3,000.

C.—M.A. OR M.Sc. STANDARD.

PRACTICAL LABORATORY.

(*a*) *Embryological and Histological work :—*	Rs.
Approximate cost of equipment for 6 students ..	3,000
(*b*) *Dissecting work :—*	
Approximate cost of equipment for 6 students ..	600

GEOLOGY.

A.—INTERMEDIATE STANDARD.

(*a*) *Maps :—*

Geological Wall Maps of India.
Physical Wall Maps of Asia and Europe.
Physical Wall Maps of the World.

—Approximate cost, Rs. 150.

(*b*) *Collections :—*

Collection of Minerals—Foote Mineral Company, Philadelphia, High School Collection, of specimens No. 13A. (or similar collection).

Collection of 102 glass crystal models, according to Professor Baumhoner. Dr. Krantz, Bonn (or similar collection).

Collection of 100 Rock specimens, according to Prof. Credner, 8·5 cm. × 11 cm. with paste-board boxes in wooden case. Dr. Krantz, Bonn (or similar collection).

Collection of corresponding Rock sections,—Dr. Krantz, Bonn (or similar collection).

Collection of minerals illustrating physical properties, 100 minerals, 5 × 6 cm. in paste-board boxes in wooden case. Dr. Krantz, Bonn, collection No. 70 (or similar collection).

Collection of Geotectonic models, of wood, accordng to Prof. Kalkowsky. Dr. Krantz, Bonn (or similar collection).

Collection of type fossils, 100 species.

Collection of Diapositives, to illustrate general Geology, according to Prof. van Calker. Dr. Krantz, Bonn (or similar collection).

—Approximate cost, Rs. 1,300.

(*c*) *Lecture Room Apparatus :—*

Projection lantern.
Demonstration Microscope.

—Approximate cost, Rs. 550.

(*d*) *Practical Class Apparatus :—*

Chemical balance with set of weights.
6 Students' balances, with weights.
Jolly's spring balance.
6 Pyknometers.

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Blowpipe set with reagents.
2 Zeiss' achromatic pocket lenses.
3 Scales of hardness.
Contact Goniometer.
Clinometer, Klockmann's model, manufactured by Fuess.
6 boxes of drawing instruments.
Swift's petrological microscope.

—Approximate cost, Rs. 1,200.

B.—B.A. or B.Sc. Standard.

(*a*) *Collections* :—

The collections specified for the Intermediate Course should be amplified and supplemented by the following :—

Blowpipe collection of 100 minerals.
Collection of sections of minerals for the study of their special properties.
Collection of wooden crystal models.
Collection of diapositives illustrative of dynamic and structural geology.
Collection of specimens illustrative of dynamical, petrogenetic, and architectonic geology.

—Approximate cost, Rs. 2,500.

(*b*) *Lecture Room Apparatus* :—

Apparatus for use with the projection lantern for demonstration of interference phenomena, polarisation, double refraction, etc., with accessories.
Optical models illustrative of double refraction in crystals.

—Approximate cost, Rs. 800.

(*c*) *Practical Class Apparatus* (in addition to that for the Intermediate Course) :—

Four students' balances in cases (100 grammes size).
Four sets of gilt weights, fractional gramme weights of aluminium.
Open beam balance carrying 1,000 gr.
Set of weights, up to 1,000 gramme, nickelled.
Specific gravity bottles, 54 grammes with perforated stoppers.
Becker's specific gravity balance for liquids and solids.
Scales of hardness.
Zeiss' achromatic pocket lenses, metal mounting × 6 and × 10 (3 of each).
One additional contact goniometer.
One additional Swift's petrological microscope.
Reflexion goniometer.
Polarizing microscope.
Dichroscope.
Chemicals.
Chemical apparatus, for chemical mineralogy and geology.
Geological hammers, chisels, small rock-grinding apparatus.
Six blowpipe sets with reagents.

—Approximate cost, Rs. 2,000.

C.—M.A. or M.Sc. Standard.

No additional apparatus will be necessary for the standard.

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EXPERIMENTAL PSYCHOLOGY.

A.—B.Sc. STANDARD.

Models and charts for anatomical and physiological demonstrations :—

Plastic Model showing the cerebral masses on one hemisphere, and the nerve fibres on the other.
Plastic model of cerebellum and spinal cord
Set of wax models (or collection of charts) showing the development of the fœtal brain.
Charts showing brain-sections and stereoscopic views of the central nervous system.
Charts showing development of brain from gymnotus to mammal.
Plastic model of the eye, showing muscles, nerves, vessels, etc.
Plastic model of the ear, showing the internal, middle and external ear.
Charts showing the anatomy of nerves and sense-organs.
Artificial eye.
Phacoscope for demonstrating accommodation of lens.
Opthalmotrope demonstrating movements of the eye.

Apparatus for experimental study of sensations :—

Olfactometer, with accessories.
Harmonical.
Tonometer.
Tuning forks. Resonators.
Quincke's tubes.
Organ pipes.
Sonometer.

Apparatus for testing the appreciation of difference in musical pitch :—

Piston whistle.
Savart's toothed wheel.
Colour Mixer with rotating discs.
Campimeter. Colour discs.
Stereoscope with slides.
Pseudoscope.
Set of charts with optical illusions.
Instrument for studying the muscle sensations and tactile space.
Apparatus with electric contacts for studying the time sense.
Sound hammer for experiments on time sense.

Time Measurement of Mental Phenomena.

Kymograph with accessories.
Tambour with writing point.
Time marker.
Writing tuning forks.
Vernier chronoscope (with accessories).
Stop watch giving fifths of a second.
Reaction time pendulum.
Flash light instrument with electric contact.
Touch reaction instrument.
Electric key.
Chain-reaction instrument.
Discs for chain-reaction instrument.

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Apparatus for Studying Association, Attention, Discrimination, Memory, Will, etc.

Material for studies in association (photographs, etc.).
Instrument for studies in association and memory.
Instantaneous shutter for association experiments.
Puzzle pictures.
Masson's disc.
Tachistoscope.
Psychodometer.
Ergograph.
Automatograph.

Technical outfit :—

(*a*) Optical and measuring instruments :—

Photometer.
Microscope.
Photographic camera.
Reading glasses.
Cardboard and gelatin paper of various colours.
Thermometer (finely graded).
Aerometer, measuring tubes for liquids, pipettes, etc.
Mathematical drawing instruments.
Apothecary scale with weights.

(*b*) *Electric apparatus :—*

Leclanché cells.
Grove cells.
Induction coil.
Electro-magnet.
Galvanometer with mirror.
Electrodes, electrical connection and wires.

(*c*) *Miscellaneous :—*

Surgical outfit (scissors, forceps, etc.).
Set of carpenter's tools.
Glass apparatus (tubes, rods, jars, funnels, etc.).
Metal stands and rods.
Rubber tubes, rubber bands, rubber atomisers, etc.
Brass and copper sheets, nails, screws, hooks, etc.
Drawing materials, paper, coloured papers, etc.
Smell and taste solutions.

B.—M.A. AND M.Sc. STANDARD.

In addition to the apparatus required for the B.Sc. standard, the following :—

Models and charts for anatomical and physiological demonstrations :—

Plastic model showing the course of the nerve-fibres throughout the encephalic mass.
Model showing the convolutions, the meridian section and the horizontal section.
Model of various heads showing the brain.
Model showing mechanism of the ear.

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Apparatus for experimental study of sensation :—

Differential Sonometer.
Siren.
Electric bells.
Electric phonometer.
Instruments for successive contrast and irradiation
Apparatus for diagnosing colour blindness.
Apparatus for appreciation of colour.
Micrometer Shutter for studying minute fields of colour.

Perception, and estimation of spatial and temporal magnitudes :—

Instrument for estimating angular divisions.
Mirror pseudoscopes.
Set of instruments for studying space in co-ordinated movements of both arms.

Time Measurement of Mental Phenomena :—

Chronoscope measuring the hundredth part of a second.
Machine for measuring reaction-time by a falling rod.
Drop window for the sudden exposure of colours, numbers, etc.
Telegraph keys with sounder.
Reaction key with buttons.

Association, Attention, Discrimination, Memory, Emotion, Will, etc. :—

Instrument for studying the complication of perceptions.
Instrument for studying the movements during the emotions (by Elbs, Freiburg).
Myograph, Sphygmograph, Pneumograph.

GEOGRAPHY.

INTERMEDIATE STANDARD.

I.—*Teaching and Demonstration.*

A.—General :—

Terrestrial Globe. Wall-maps (continents and principal Political Divisions). Magic Lantern with slides. Large atlas.
Stereoscope with slides illustrative of Descriptive Geography (principal countries of the world, with interesting scenes and monuments).

B.—Special :—

(*a*) Mathematical (or Astronomical) Geography :—

An orrery. Diagrams and magic lantern, slides illustrative of the solar system and its configuration, changes of the seasons, varying lengths of day and night, solar and lunar eclipses, phases of the moon, tides.
Diagrams showing relative local time for principal cities.
Tables of latitude and longitude,
Stellar chart for identifying the pole star and chief circumpolar constellations.

(*b*) Orographical and Hydrographical wall maps for studying distribution of land and water :

Maps showing contour of the land, and principal mountain systems, lines of drainage, water basins, river systems and deltas.
Relief map of India.

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Ocean charts showing ocean depths and contour of the ocean floor, ocean currents with surface temperature, coral and other reefs, ocean-deposits.
Maps of Arctic and Antarctic Regions.

(*c*) Stratigraphical charts and Diagrams :

Diagrams explaining varieties of stratification. Section of a coalfield in Bengal.
Geological Survey map of India.

(*d*) Botanical and Zoological charts :

Charts showing the distribution (1) of plants ; (2) of Animals.

(*e*) Ethnographical and demographical wall maps showing the distribution of Man and his industries :

Anthropological charts showing the distribution of the Races of Man. Stereoscopic and lantern slides showing chief racial types. Maps showing the distribution of (1) mineral products, (2) vegetable products, including food-stuffs (India).
Map showing Railway Lines (India).
Maps showing ports and harbours—ocean highways.

(*f*) Statistical charts and diagrams more especially with regard to India.

II.—*A small Collection of the chief Minerals and Economic Products of India.*

III.—*Practical Course.*

A.—Cartography, drawing plans and maps, projections. Orientation and determination of latitude, and modelling in sand and clay.
Two sets of the following appliances for a class of 20 students :—

Drawing materials and instruments with special reference to Cartography.
Measuring Tape and Chain.
Mariner's Compass.
Magnetic Needle.
Spirit-level and Plumb line.
Clinometer.
Clay-modelling tool—palette knife.
Magnifying Lens.

B.—Meteorological observations :—

One set of the following instruments for a class of 20 students.
Two ordinary thermometers.
Maximum and Minimum thermometer.
Thermometer screen.
Barometer (with vernier and thermometer).
Dry-and-wet bulb thermometer.
Hygrometric Tables.
Rain gauge.
Wind-direction. Compass-card and wind vane.

C.—Meteorological charts (with Meteorological tables, where necessary) for studies in atmospheric distribution.

(*a*) Curves showing annual and diurnal ranges of temperature, and of pressure (for typical localities, including Calcutta and London).

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(*b*) Isothermal lines showing the mean temperature of the globe (1) for the year, (2) in January and (3) in July.
(*c*) Lines showing the mean barometrical pressure and the prevailing winds of the globe, (1) for January, (2) for July.
(*d*) Lines showing periodical winds (including the monsoon).
(*e*) Simple diagrams showing the direction of gyratory movements of the wind in the Northern and the Southern Hemisphere.
(*f*) Weather charts, isobars, gradients, areas of depression and their shiftings. Tracks of cyclones north and south of the Lines.
(*g*) Rainfall chart for the globe.
Rainfall chart for India.
Chart showing monthly rainfall for Calcutta and London.
(*h*) Daily weather chart for Calcutta.

CHEMISTRY.

A.—Intermediate Standard.

Practical List of apparatus for 20 students, working in pairs.

	Quantity.
Aspirator, 10 litre capacity	2
Balance, with agate knife edges and planes, graduated beam, beam support, thick glass vessel, double book and polished mahogany stool for specific gravity experiments, to carry 250 gms, sensitive to 1 mg.	4
Analytical weights, ·001 to 100 gms.	4 sets.
Dispensing scales with weights	1
Basin, evaporating, Royal Berlin	1 doz.
Porcelain, with spout, (capacity 80 cc.)	
Ditto ditto 100 cc.	2 doz.
Ditto ditto 300 cc.	1 doz.
Sand bath deep spun, etc., diam. 10 cm.	1 doz.
Steam bath (to be made locally)	
Beakers, Bohemian glass, without lip, capacity 90 cc. ..	1 doz.
Ditto ditto ditto 140 cc. ..	2 doz.
Beaker, Jena glass, no. 2, capacity 150 cc.	1 doz.
Ditto ditto ditto 500 cc.	1 doz.
Foot blower, size no. 3	2
Extra rubber disc for no. 3.	4
Extra nets	2
Blowpipe, kerosine (Dr. Richardson's)	1
Blowpipe, Universal, with ball socket movement	2
Mouth Blowpipe, nickel-plated	1 doz.
Bottles, best Bohemian glass—	
N. M., without stopper, 150, cc.	6 doz.
N. M., flat stoppered, for reagents with carefully ground stoppers, capacity 60 cc.	6 doz.
N. M., flat stoppered, for reagents with carefully ground stoppers, capacity 150 cc.	1 gross.
N. M., flat stoppered, for reagents with carefully ground stoppers, capacity 250 cc.	2 gross.
Bottles, W. M., flat stoppered, capacity 60 cc.	6 doz.
Ditto ditto ditto 225 cc.	6 doz.
Woulff's bottles with two necks, one in centre and one on shoulder, capacity 250 cc.	2 doz.
Burettes with stopcocks (c. form) lateral, normal, calibrated 50 cc. × $\frac{1}{10}$	1 doz.

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	Quantity.
Bunsen burner with air regulator, diam. 1 cm.	2 doz.
Star support for the above	1 doz.
Chimney, conical for the above	1 doz.
Blowpipe jet for the above	1 doz.
Bench light burners for bending glass tubes	6
Fletcher's safety, Bunsen, no. 10.	3
Cylindrical cans for boiling water, condensers, Liebig's, inner tube fitted with I. R. cork, 40 cm.	½ doz.
Connectors, double (for batteries)	2 doz.
Corks, finest quality, 23-25 mm. long, 2 mm. taper, diam. of top 16 mm.	6 doz.
Corks, finest quality, 23-25 mm. long, 2 mm. taper, diam. of top 20 mm.	1 gross.
Corks, finest quality, 32 mm. long, head measure 30 mm.	1 gross.
Ditto ditto ditto 40 mm.	4 doz.
Ditto ditto ditto 50 mm.	2 doz.
Corks, India Rubber, best quality, red—	
Size 1, diam. of bottom 13 mm. top 16 mm.	2 doz.
Size 3-A ditto 25 ditto 29 mm.	2 doz.
Size 5 ditto 29 ditto 35 mm.	2 doz.
Cork borers, of brass tube with rod, nickel plated, in sets of 3	1 doz. sets.
Ditto ditto ditto ditto 12	2 sets.
Cork pressers, cast iron, heavy 25 cm. long	2
Covers for beakers, concave (clock glass), diam. 7½ cm.	2 doz.
Crucibles, Berlin Porcelain, with cover, no. O, 14 cc.	2 doz.
Crystallizing dishes, flat, bottom, with spout, 5 cm. deep, 10 cm. diam.	2 doz.
Desiccators, Scheibler's with ground glass cover, 15 cm. diam. of top	4
Desiccator discs, perforated circle of Berlin Porcelain to fit above, 11 cm.	4
Files, round, 13 cm. long, without handles	1 doz.
Files, triangular, 13 cm. long, without handles	1 doz.
Filter discs, perforated, Berlin Porcelain for use in funnels, true circular 64 mm. diam.	4
Filter papers, Schleicher and Schüll, cut circular, no. 595, for qualitative work, diam. 9 cm.	1,000
Filter papers, Schleicher and Schüll, cut circular, no. 595, for qualitative work, diam. 11 cm.	1,000
Flasks, Bohemian, flat bottom, capacity 200 cc.	1 doz.
Ditto ditto ditto 500 cc.	2 doz.
Ditto round bottom, capacity 200 cc.	1 doz.
Ditto ditto Jena glass, short neck, 500 cc.	1 doz.
Flasks with side tube from neck, straight, 200 cc.	1 doz.
Flasks, Jena glass, conical, Erlenmeyer's, capacity 200 cc.	1 doz.
Measuring Flasks, standard, gauged at one mark, stoppered neck, 250 cc.	1 doz.
Measuring Flasks, standard, gauged at one mark, stoppered neck, 1,000 cc.	1 doz.
Funnels, Bohemian glass, with ground edges, sides inclined at 60° plain, diam. 6 cm.	1 doz.
Funnels, Bohemian glass, with ground edges, sides inclined at 60° plain, diam. 8 cm.	1 doz.
Funnels, Bohemian glass, with ground edges, sides inclined at 60° plain, diam. 19 cm.	4

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	Quantity.
Funnels, Bohemian glass, with ground edges, sides inclined at 60° ribbed 8 cm.	6
Safety funnels with long tube for fitting up gas flasks, etc., thistle head, 32 cm. long	1 doz.
Safety funnels, with long tube, etc., with bend and one bulb, thistle head, 30 cm.	½ doz.
Gas jars, cylindrical with ground flange, Bohemian glass, 21 x 4 cm.	1 doz.
Gas jars, cylindrical with ground flange, Bohemian glass, 32 x 5 cm.	1 doz.
Ground glass discs, diam. 5 cm.	1 doz.
Ditto ditto 6 cm.	1 doz.
Graduated gas jar with spout on glass foot, scale descending capacity 100 cc.	4
Graduated gas jar with spout on glass foot, scale descending capacity 500 cc.	4
Kipp's apparatus, bulb 100 cm. diam.	3
Magnets	12
Mortars and Pestle	12
Ditto iron	1
Pinch Cocks	12
Pipettes, 5 cc.	12
,, 10 cc.	12
,, 25 cc.	12
Platinum foil, ·01 mm. thick	5 gms.
,, wire, ·25 mm...	5 gms.
Pliers, steel	2
Apparatus for showing diffusion	1 set.
Retorts, 70 cc.	1 doz.
,, 150 cc.	1 doz.
Retort stand	12
Clamps for flasks	12
Glass rods	½ kgm.
Boxwood rulers	2
Deflagrating spoons	6
Iron spoon for burning phosphorus	6
Test tube, thin glass	4 gross.
Boiling tubes	4 doz.
Test tube brushes	12
Test tube stands	12
Thermometers up to 200°c.	6
Ditto 360°c.	6
Crucible tongs	1 doz.
Graduated glass tubes	4
Pneumatic troughs	1 doz.
Glass tubing	3 kgm.
Combustion quills	1 kgm.
Jena glass combustion tubes	2 kgm.
I. R. tubing, best, int. diam. 4 mm.	12 yds.
Ditto ditto 10 mm.	24 yds.
Watch glass	2 doz.

To be purchased locally.

Wire gauze, iron, 40 holes to an inch	
,, copper, 40 holes to an inch	
Wire, iron	

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	Quantity.
Wire, copper	
Tripods	1 doz.
$CaCl_2$ tubes	1 doz.

—Approximate cost, Rs. 900.

Reagents for practical class of 20 students.

—Approximate minimum cost, Rs. 150 (one year's supply).

List of chemical apparatus for Lecture work, Intermediate examination.

	Approximate quantity required.
Evaporating Basin of aluminium, fig. 3, strong, polished, pure 10 cm. diam. with spout	1
Ditto of "R" Resistance glass, with spout, 70 mm. diam.	6
Ditto Royal Berlin Porcelain with spout, glazed inside and out—	
No. 00 capacity 50 cc.	6
,, 1 ,, 100 cc.	6
,, 2 ,, 140 cc.	6
,, 4 ,, 200 cc.	6
Ditto glazed inside and partially outside—	
No. 5 capacity 300 cc.	3
,, 6*a* ,, 535 cc.	2
,, 7 ,, 765 cc.	2
Beakers, Bohemian glass without spout—	
No. 0 capacity 50 ccm.	6
,, 1 ,, 90 ccm.	6
,, 2 ,, 140 ccm.	6
,, 3 ,, 200 ccm.	6
,, 4 ,, 325 ccm.	6
,, 9, 2 litres capacity	2
Beakers of Resistance "R" glass wide shape, with spout—	
No. 1 capacity 150 cc.	6
,, 2 ,, 200 cc.	6
,, 3 ,, 300 cc.	6
,, 4 ,, 500 cc.	6
,, 5 ,, 750 cc.	6
,, 6 ,, 1000 cc.	3
Covers for Beakers, gas jars, etc., ground one side glass circle—	
Diam. 5 cm.	3 doz.
,, 7½ cm.	3 doz.
,, 10 cm.	3 doz.
Ditto with hole in centre—	
Diam. 7½ cm.	1 doz.
,, 10 cm.	6
Ditto concave (clock glasses)—	
Diam. 6½ cm.	2 doz.
,, 9 cm.	1 doz.
Tripods, with circular top and iron legs—	
Height 15 cm.	6
,, 18 cm.	6

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	Approximate quantity required.
Sand bath dishes, shallow, stout, sheet iron, flat bottom, 10 cm. diam	3
Asbestos mill board, thickness of sheet $\frac{1}{16}$ in., weight per sheet 40 × 40 in 4 lbs	4 lb.
Asbestos yarn, $\frac{1}{4}$ in. diam.	1 lb.
Bench light, Batswing burner, height 30 cm.	2
Flat flame, Bunsen burners for bending glass and heating tubes, length of opening at the mouth 15 cm.	1
Bunsen gas burner with air regulation	6
Rosetop for ditto ditto	3
Star support for chimneys	4
Iron chimneys, conical	4
Blowpipe jets	4
Teclu gas burner, large size	2
Head Fig. A to fit ditto	2
,, Fig. B to fit ditto	2
,, Fig. C to fit ditto	2
Chimney with clamping screw	2
Fletcher s safety, Bunsen, No. 5	2
Spirit lamps with extra neck, capacity 120 cc.	6
Flasks, Bohemian, flat bottom—	
Capacity 75 cm.	1 doz.
,, 175 cm.	1 doz.
,, 250 cm.	1 doz.
,, 400 cm.	1 doz.
,, 500 cm.	1 doz.
,, 750 cm.	1 doz.
,, 3 litres	4
Flasks, 500 cc.	6
Flasks of " R " Resistance glass—	
Shape D, capacity 78 cc.	1 doz.
,, ,, 250 cc.	1 doz.
,, ,, 500 cc.	1 doz.
,, ,, 750 cc.	6
,, ,, 1000 cc.	4
,, ,, 1500 cc.	3
Shape D, of extra hard glass for preparing Oxygen round bottom—	
Capacity 150 cc.	1 doz.
,, 250 cc.	6
Capacity of " R " Resistance glass, Erlenmeyer's, capacity 200 cc.	6
Bolt head flask, 3,000 cc. capacity	2
Retorts, stoppered, &c.—	
Capacity 150 cc.	1 doz.
,, 250 cc.	1 doz.
Receivers, with three necks, capacity 3 litres	2
Retorts, without tubulure and stopper, capacity 250 cc. ..	6
Ditto ditto capacity 500 cc. ..	6
Retorts with tubulure for cork—	
Capacity 250 cc.	6
,, 500 cc.	3
Gas developing apparatus, 40 cm. long	2

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	Approximate quantity required.
Gasholder, 25 litres capacity	1
Retort stands, 24 in. long	6
Clamp, of malleable iron	6
Liebig's condenser, glass jacket and tube and length of body 60 cm.	6
Liebig's condenser, glass jacket and tube and length of body 80 cm.	2
Condensation tube, U tube, 30 cm. long	2
Condenser stand	2
Funnels, glass sides, inclined at 60 plain.	
Diam. 5 cm.	1 doz.
,, 7½ cm.	1 doz.
,, 10 cm.	1 doz.
,, 15 cm.	3
Ditto ribbed, 10 cm.	6
Condenser with one tubulure and worm, length of jacket 25 cm., diam. 7½	2
Funnels, separatory, and—	
Capacity 60	6
,, 100	6
Glass tubing for bending, nos. 2, 3 and 5	4 K.
Ditto ditto no. 11	5 K.
Combustion tubing, best Bohemian, 5 to 10 mm. diam., nos. 2 to 6, assorted	2 lb.
Jena combustion tube, 12 to 25 mm. outside diam., assorted	4 lb.
Glass cutting tools, set of 12, semi-circular	1 set.
Set of glass blower's tools	1 set.
Files, round, 10 cm. long, without handles	6
Files, triangular 10 cm.	3
Rasps, half round, 15 cm. long	2
Flat files, 15 cm. long	2
Corks, 23-25 mm. long, 2 mm. taper, diam. of top 18 mm. ..	6 doz.
,, 23-25 mm. ,, 2 mm. ditto 22 mm. ..	6 doz.
,, 32 mm. long 2 mm. head measure 30 mm.	3 doz.
,, 32 mm. do. 2 mm. 40 mm.	3 doz.
,, 32 mm. do. 2 mm. 50 mm.	3 doz.
,, India rubber, red size 1, diam. of bottom 13 mm., top 16 mm.	2 doz.
3a 26 29	2 doz.
4 29 33	2 doz.
Cork borers in sets of 12	1 set.
Cork pressers, wheel pattern	1
Cork borer sharpener for no. 983	1
Tubing, best India rubber, red, int. diam. 4 mm.	12 yds.
Ditto ditto ditto 10 cm.	12 yds.
Universal blowpipe	1
Footblower, size no. 3	1
Mouth blowpipe, nickel-plated	2
Platinum foil, 0·3 mm. thick, 100 sq., 1 cm., weighing 5 gms.	10 gms.
Platinum wire. 25 mm., diam. 1 metre, weighing 1·2 gms. ..	6 gm.
Steel hammers, 15 mm. square face	2
Anvils	2
Horseshoe magnets, 20 cm. long	1

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	Approximate quantity required.
Mortars and pestles, diam. 8 cm.	3
Ditto ditto 15 cm.	2
Mortars iron bowlshape, diam. 5 in.	1
Forceps	2
Crucibles, Royal Berlin porcelain, with cover—	
No. 1, 25 cc.	3
No. 3, 80 cc.	3
Tongs, 15 cm. long	3
,, for picking up mercury	1
,, 61 cm. long	1
Spatulas, 15 cm. long	4
,, 20 cm. ,,	2
Pliers, steel and 6 in. long	2
Scissors, 6 in. long	1 pair
Watchmaker's vice	1
Watch glass clips, diam. 10 mm.	2
Bottles, 125 cc. N. M. with stoppers	3 doz.
,, 250 cc.	3 doz.
,, 300 cc.	2 doz.
,, 750 cc.	1 doz.
Bottles, cap. 2 oz. N. M. with stoppers	3 doz.
Ditto 6 oz.	3 doz.
Ditto 12 oz.	2 doz.
Ditto 20 oz.	1 doz.
Bottles, W. M., flat stoppered, cap. 4 oz.	2 doz.
Ditto ditto ditto 8 oz.	2 doz.
Ditto ditto ditto 10 oz.	1 doz.
Specimen bottles, diam. 6 cm., int. diam. 4 cm.	2 doz.
Jars, cylindrical, etc., 15 cm. high	1 doz.
Ditto 4 etc., 20 cm.	1 doz.
Ditto 5 etc., 30 cm.	1 doz.
Ditto 6½ etc., 40 cm.	6
Jars, graduated, cap. 200 cc.	2
Gas jars, 500 cc. cap.	2
Bell jars, cap. 2 litres	3
Deflagrating jars, 10 cm. diam.	2
Ditto globes, diam. 30 cm.	2
Detonating bottle	2
Balloons, collodion, cap. 800 cc.	1 doz.
Ditto ditto 1,500 cc.	6
Deflagrating spoons with brass cap.	6
Iron spoons for burning P. or S.	4
Deflagrating stands	2
Pneumatic trough, length 36 cm.	1
,, circular, 16 cm. deep	1
Beehive shelves, diam. 10 cm.	1
Pneumatic trough, porcelain, 18 cm. long	1
Pneumatic trough, 50 cm. long	1
Funnels, long neck, 30 cm. long	1 doz.
Ditto ditto 46	6
Funnels, safety, medium	6
Kipp's apparatus, 1 litre cap.	4
Chloride of calcium tube, 20 cm. long	6
U-shaped, length of limb 16 mm., diam. of limb 15 cm.	6

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	Approximate quantity required.
U-shaped, 15 cm. long }	
„ 20 mm. diam }	6
„ 15 cm. long	3
Chloride of calcium jars, height 25 cm.	6
Absorption tubes, Babo's	2
Gas washing bottle, cap. 150 cc.	6
Eudiometer, 40 cm. long	2
Bunsen's gas voltameter	1
Gas tubes sealed at one end, cap. 50 ccm. in $\frac{1}{10}$	2
„ glass stop cock at top 50 ccm. $\frac{1}{8}$	2
Schroedter's apparatus	1
Aspirators, 4 litres cap.	2
Set of four burners, etc.	1
Ramsay's tube heater with burner	1
Erlenmeyer's combustion furnace (15 burners)	1
Standard delivery pipettes—	
1 cc.	2
2 cc.	2
5 cc.	2
10 cc.	2
25 cc.	2
50 cc.	2
Standard flasks with one mark, 250 cc. with stopper—	
500 cc.	2
With spout, 200 cc.	1
Normal burettes with stop cock, 50 × $\frac{1}{10}$ cc.	2
„ for pinch cocks, 50 × $\frac{1}{10}$ cc.	2
Burette floats	4
Burette stands, iron	1
Burette clips, No. 3, 18 mm.	1 doz
Specific gr ,vity flasks, 25 gms.	2
„ tube, Sprengel's, 10 gms.	2
Hydrometers.	
Normal Thermometers from 0 to 100	3
Ditto ditto 0 to 360	3
Vacuum desiccator, inside diam. 14 cm.	1
Desiccators, Hempels, diam. 10 cm.	1
Ditto ditto 10 cm.	1
Brass syringe for exhausting and condensing length of barrel, 13 cm. diam. 2½ cm.	1
Bell glass receiver, int. height 20 cm. outside diam. 18 cm. ..	2
Davy's No. 4 safety lamp	1
Glass stop cocks, bore 2 mm.	6
Test glasses, cylindrical (c), 100 cc.	1 doz.
Ditto ditto 150 cc.	1 doz.
Ditto ditto 200	6
Test tube holders, cork lined, No. 1	2
Test tubes of hardest combustion glass, 50 mm. × 10 m. ..	2 doz.
Ditto ditto ditto 75 × 13	2 doz.
Test tube, int. diam. ½, 10 cm. long	1 gross.
Ditto int. diam. ⅝, 10 cm. „	6 doz.
Ditto 6 in. long, 1 inch diam.	3 doz.
Decomposition of water app. complete	1
Ozone apparatus	1

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	Approximate quantity required.
Grove's battery, etc., set of six	1 set.
Connectors, double, large S. W. G.	1 doz.
Copper wire, silk covered, double	1 lb.
Induction coils, Ruhmkorff's with Ruhmkorff's commutator, length of spark 75 mm., No. 9	1
Apparatus to determine the proportion by vol. of elementary gases contained in one vol. of HCl with metal stand ..	1
Apparatus for vol. analysis of ammonia by chlorine and hypobromide of sodium	1
Apparatus to show that 3 vols. of H. combine with one of N. to form 2 vols. of NH_3 with stand	1
Apparatus to demonstrate that H and Cl combine to form HCl without alteration of vol.	1
Apparatus to show that HCl is produced by the combination of one vol. of H with one of Cl	1
Apparatus to prove that water contains two vols. of H and one of O (both limbs graduated)	1
Apparatus for the decomposition of HCl, carbon electrodes ..	1
Iron stand for the above	1
Apparatus to illustrate the effect of pressure and temp. complete	1
Apparatus for the determination of volumetric composition of NH_3	1
Apparatus to illustrate that when H and O combine to form water, the vol. measured at 100° is reduced by $\frac{1}{3}$ ..	1
Iron tripod support for condenser	1
Stand	1
Apparatus for the decomposition of steam by sparking ..	1
Apparatus to show that O has the same vol. as the CO_2 and SO_2 produced from it	2
Stands for the above	2
Apparatus for producing Nitric peroxide from air	2
Apparatus to show the phenomena of diffusion complete with stand	1
Apparatus for obtaining equal vols. of Cl and H by electrolysis	1
Atomic weight chart	1
Woulff's bottles with two necks, 250 cap.	6
Ditto ditto 500 cap.	6
Apparatus for illustrating Boyle's Law	1
Cast iron bottles with screwed stopper for basting when frozen.	
Charles Schleicher and Schüll's No. 505 Filter paper in sheets of 47 × 54 cm.	100
Ditto Circular No. 595, 7 cm.	500
Ditto ditto ditto 9 cm.	500
Ditto ditto ditto 11 cm.	500
Ditto ditto ditto 24 cm.	250
Steam bath.	
Air bath.	
Sieves.	
Iron wire gauze.	

—Approximate cost, Rs. 1,300.

Reagents, etc., for Lecture room.

—Approximate cost, Rs. 200 (one year's supply).

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B.—B.A. OR B.Sc.

(*a*) *Practical* (*in addition to the Intermediate Standard apparatus*).

	Approximate quantity required.
Basins of lead with round bottom with spout 7½ cm. diam. ..	4
Air bath.	
Steam bath.	
Crucibles, fire clay triangular	12
Covers for above	12
Crucibles and cover of platinum	1
Flask, Bohemian, flat bottomed, cap. 200 cc.	6
Kjeldahl Flask, round bottom, long neck, cap. 300 cc. ..	2
Conical flasks, 400 cc.	1
Hot water funnels of copper with glass funnel	2
Separatory funnels	2
Schiff's nitrometer	1
Filter pumps	2
Specific gravity flasks with perforated stopper	3
Pipe clay triangle	12
Ca Cl_2 tube	12
Barometer tubing	1 K
V. Meyer's vapour density apparatus	2
Outer bulb tube for above	2
V. Dy. flasks, small	6
Will and Varrentrap's bulbs	2
Combustion furnace	1
Platinum crucible	5

—Approximate cost, Rs. 300.

Reagents for practical class of 15 students.

—Approximate minimum cost, Rs. 350 (one year's supply).

(*b*) *List of apparatus for Lecture work* (*in addition to that for the Intermediate Standard*).

Nickel basin, 10 cm. diam. (weight 9 oz. troy)	1
Platinum basin with spout, 70 cc. cap.	1
Water bath, enamelled iron with tripod stand, diam. 16 cm.	1
Flasks, conical, Jena glass, Erlenmeyer's—	
Cap. 200 cc.	6
,, 300 cc.	6
Distillation flasks, 100 cc.	2
250 cc.	3
500 cc.	2
Fractional distillation tube with two bulbs	1
Ditto ditto 30 cm. long	1
Ditto ditto cap. ½ litre	3
Receivers with three necks, 1½ litre	3
Crucible and cover roses with gas leading tube	3
Ditto of platinum, cap. 35 ccm.	1
Crucible of copper with cover diam. 8 cm.	2

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	Approximate quantity required.
Crucible of copper with cover diam. 12 cm.	2
Pipe clay triangles	1 doz.
Crucible, No. D., 10 cm. high	2
Covers for the above	2
Tongs, nickel-plated, 20 cm. long	4
,, for picking up mercury	1
Potash bulb, Geissler's	2
Ditto ditto	2
Ditto Will and Varrentrap's	2
Kjeldahl flasks, 300 ccm. cap.	3
Pear-shaped glass heads with safety trap	2
Nitrometer, Schiff's	1
Ditto graduated tube, 50 ccm. in. $\frac{1}{5}$	1
Cairns' Furnace	1
Cupels of boneash, No. 3·25 mm. diam.	1 doz.
Apparatus for superheated steam, length of body 80 cm.	1
Liebig's condensers, total length 105 cm.	2
Anschutz, Thermometers Nos. 1-5	1 set.
Beckmann's Thermometer, Range of Scale 6° in $\frac{1}{100}$ °C.	1
Manometer	1
Standard Barometer	1
Dialysers, Bellshaped glass diam. 10 cm.	2
Dialysis paper $21\frac{1}{2}$	1 doz. sq.
Pfeffer's apparatus, cap. 150 cc.	1
Melting point apparatus	1
Apparatus for the preparation of acetylene from H. and C.	1
Acetylene gas apparatus	1
Vapour density bulbs, 400 cm. cap.	3
Dumas' Bath with holder	1
Vapour density apparatus, V. Meyer's with modified fall arrangement	2
Small s oppered bot les	6
Outer bulb	2
Beckmann's depr s ion of freezing point apparatus, complete set	1 set.
Beckmann's Boiling point apparatus Boiling flask	1
Steam jacket porcelain.	
Thermometer 0—200° for giving the temperature of the steam bath	1
Two spiral condensers	set
Glass beads, etc.	set.
Stand with clamp and boss	set.
Two Beckmann burners	set.
Ring burner head for these	set.
Landsberger's Molecular weight determination apparatus	set.
Richard's Thermo regulator	1
Pocket Spectroscope, with comparison prism, illuminating, mirror and adjustable slit	1
Spectrum tubes filled with Helium	1
Ditto ditto Argon	1
Eiloart's solid formulæ models, etc.	set.
Stand for the above	2
Models, etc., complete set of 12 rubber-fittings, 48 coloured balls, etc.	set.
Copper gauze, 90 holes to an inch	2 sq. ft.

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		Approximate quantity required.
Filter paper, washed with H. Cl. and H. F. for quantitative work No. 589 (2) white ribbon—		
	9 cm. ..	560
	11 cm. ..	100
(3) Blue ribbon	9 cm. ..	100
	11 cm. ..	100
(4) Yellow ribbon	9 cm. ..	200

—Approximate cost, Rs. 600.

Reagents, etc., for lecture work.

—Approximate cost, Rs. 300 (one year's supply).

C.—M.A. OR M.SC. STANDARD.

An additional supply of organic and rare inorganic substances will be necessary.

—Approximate minimum cost, Rs. 1,000.

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IV.

EXISTING REGULATIONS.*

(i) ARTS.

ENTRANCE EXAMINATION.

(To be in force until the Examination of 1909.)

1. The Entrance Examination shall commence annually at such time as the Syndicate shall determine (the date to be approximately notified in the Calendar for the year) and shall be held in Calcutta and in such other places† as shall from time to time be appointed by the Syndicate.

2. Any person, wherever he shall have been educated, may be admitted to the Entrance Examination.

3. Every candidate for admission to the Entrance Examination shall send his application, with a certificate in the form entered in Appendix A, either to the Registrar or to a local officer recognised by the Syndicate. Every such application must reach the office of the Registrar at least six weeks before the date fixed for the commencement of the Examination.

4 A fee of ten rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar or to a local officer recognised by the Syndicate. A candidate who fails to pass, or to present himself for examination, shall not be entitled to claim a refund of the fee. A cand date may be admitted to one or more subsequent Entrance Examinations on payment of a like fee of ten rupees on each occasion.

5. The Entrance Examination shall be conducted by means of printed papers, the same papers being used at every place at which the Examination is held.

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* The term "Existing Regulations" means the Regulations in operation on the date previous to that on which the new Regulations came into force.

† The following places have already been appointed :—

Akyab, Balasore Bankura, Barisal, Bassein, Berhampur, Bhagalpur, Burdwan, Chittagong, Cooch-Behar, Dacca, Darjeeling, Debrugarh, Gauhati, Hazaribagh, Hughli, Katak, Krishnagar, Mandalay, Maulmein, Midnapur, Pabna, Patna, Purulia, Rampur-Baulia, Ranchi, Rangoon, Shillong, Silchar, and Sylhet.

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6. At the Entrance Examination every candidate shall be examined in the following subjects :—

I.—LANGUAGES.

English and one of the following languages :—

Greek.	Burmese.
Latin.	Armenian.
Arabic.	Pali.
Persian.	French.
Hebrew.	German.
Sanskrit.	Tamil.
Bengali.	Telugu.
Uriya.	Khasi.
Hindi.	Assamese.
Urdu.	Gujarathi.

Any other language may be added to this list by the Syndicate.

The character of the examination in English is indicated by the following extract from the resolution of the Senate :—

"That under the head English Literature there ought to be both Prose and Poetry ; that the pieces selected should, in point of quantity, be such as can be conveniently mastered by the students within the time allowed, and that, in point of quality, they should be such as can be well and easliy appreciated by an Indian youth of fifteen or sixteen years of age.

"That English grammar and composition should be studied by Entrance students more with a view to be able to write plain English correctly than with a view to learn the philology of the English tongue.

"That there be two examination papers only in English as at present : the first to contain questions on the text-books, and questions on grammar arising therefrom, the second to contain passages in a vernacular as defined below, for translation into English together with questions on English composition.

"That in the case of students whose vernacular is English, a special paper be set in which simple essays or letters or other original composition should replace the passages for translation into English."

Sentences in each language in which the candidate is examined shall be given for translation into the other language, and where a candidate takes up an Oriental language for his second language, he shall be required to translate sentences in English into one of the following vernacular languages :—

Bengali, Hindi, Uriya, Mahrathi, Urdu, Burmese, Armenian, Parbatia, Assamese, Telugu, Gujarathi, Khasi and Tamil. The Syndicate shall have power to add to this list.

The papers in each language shall include questions on grammar and idiom.

II.—MATHEMATICS.

Arithmetic.

The four simple rules, Vulgar and Decimal Fractions, Reduction, Practice, Proportion, Simple Interest, Extraction of Square Root, Present Worth and Discount, and Stocks.

Algebra.

The four simple rules, Proportion, Simple Equations, Extraction of Square Root, Greatest Common Measure, Least Common Multiple.

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Geometry.

The first four Books of Euclid, with easy deductions.

III.—HISTORY AND GEOGRAPHY.

The outlines of the History of England and the History of India, the Elements of General and Physical Geography.

DRAWING.

An optional examination shall be held in Drawing. If a candidate passes, the fact shall be notified in his certificate; but success or failure in that subject shall not affect his success or failure in the Entrance Examination or his position in the pass list.

7. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in three divisions, each in alphabetical order, with a column showing the age stated by each candidate in his application. Every successful candidate shall receive a certificate in the form entered in Appendix A.

FIRST EXAMINATION IN ARTS.

(*To be in force until the Examination of* 1908.)

1. The First Examination in Arts shall commence annually at such time as the Syndicate shall determine (the date to be approximately notified in the Calendar for the year), and shall be held in Calcutta and in such other places* as shall from time to time be appointed by the Syndicate.

2. Any undergraduate of the University may be admitted to this examinat on, provided he has prosecu ed a regular course of study in an affiliated Institution for not less than two academical years after passing the Entranc Examination.† No candidate shall be considered to have prosecuted a regular course of study unless he has attended at least 66 per cent. of the lectures delivered in the Institution to which he belongs in each of the subjects in which he is to be examined.‡ This percentage shall

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* The following places have already been appointed :—
Barisal, Berhampur, Bhagalpur, Burdwan, Chittagong, Cooch-Behar, Dacca, Gauhati, Hazaribagh, Hughli, Katak, Krishnagar, Midnapur, Patna, Rampur-Baulia, Rangoon, and Sylhet.

† The Syndicate have power to make exceptions to this rule in favour of those Deputy Inspectors of Schools, Sub-Inspectors of Schools, and *bonâ fide* Masters of English Schools, who have served as such for the full period of two academical years. Their applications must be signed by the Inspector of Schools in whose circle they are employed.

‡ The Syndicate have power to make exceptions to this rule.

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be calculated on the total number of lectures in each subject delivered in the Institution from the commencement of the academical year after the summer vacation. If a student is transferred from one Institution to another in the course of a year, the percentage of attendances in the second Institution shall be calculated on the total number of lectures in each subject delivered in that Institution after the date of the transfer certificate. If a student fails to enter an affiliated Institution before the 1st August in any year, his attendance for that year shall not, except with the special sanction of the Syndicate, be counted.

3. Every candidate for admission shall send his application with a certificate in the form entered in Appendix A, either to the Registrar or to a local officer recognised by the Syndicate. Every such application must reach the office of the Registrar at least six weeks before the date fixed for the commencement of the examination.

4. A fee of twenty rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar or to the local officer recognised by the Syndicate. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee. A canditdate who fails to pass may be admitted to any one or more subsequent First Examinations in Arts on payment of a like fee of twenty rupees on each occasion, provided he produces a certificate from the head of an affiliated Institution showing that his name has been on the olls of that Institution for one academical year since the date of the last examination to which he was admitted,* and that he has attended 66 per cent.† of the lectures delivered in the Institution during that academical year in each of the subjects in which he is to be examined. A candidate who fails to present himself may be admitted to any one subsequent First Examination in Arts on payment of half the fee.

5. The First Examination in Arts shall be conducted by means of printed papers, the same papers being used at every place at which the examination is held.

6. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed arranged in three divisions, the first in order of merit, and the second and third in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

7. At the First Examination in Arts every candidate shall be

* The Syndicate have power to make exceptions to this rule in the case of candidates who, after failing in the examination, have served as teachers for six months since the date of the last examination.

† The Syndicate have power to make exceptions to this rule.

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examined in the following Compulsory Subjects, and the numbers of papers in each shall be as follows :—

COMPULSORY SUBJECTS.

I.—English	Two papers
II.—Mathematics	,,
III.—A classical or other additional language besides English	,,
IV.—Science, comprising Elementary Physics and Chemistry	,,
V.—*Either* History *or* Logic	One paper.

Candidates may also be examined, if they so desire, in not more than one of the following Optional Subjects, and the number of papers in each shall be as follows :—

OPTIONAL SUBJECT.

A.—Logic (for candidates who have not taken it up as a Compulsory subject)	One paper.
B.—History (for candidates who have not taken it up as a Compulsory Subject)	,,
C.—Physiology	,,
D.—Sanitary Science	,,

I AND III.—LANGUAGES.*

The Second Language shall be one of the following languages :—

Greek.	Persian.
Latin.	Pali.
Sanskrit.	Armenian.
Hebrew.	French.
Arabic.	German.

Any classical language may be added to this list by the Syndicate. Sentences in each language in which the candidate is examined shall be given for translation into the other language.

The papers in each language shall include questions on Grammar and Idiom.

II.—MATHEMATICS.

(*a*) *Arithmetic.*

(*b*) *Algebra.*—Quadratic equations; theory of quadratic equations and expressions; imaginary expressions; arithmetical, geometrical and harmonical Progressions; permutations and combinations; binomial and exponential theorems.

(*c*) *Geometry.*—Euclid. Books I-IV; Book V, definitions; Book VI, the more important properties of the Parabola, the Ellipse and the Hyperbola.

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* The text-books will be fixed from time to time by the Syndicate. (*See Section VIII.*)

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(*d*) *Trigonometry.*—Methods of measuring angles.
Trigonometrical ratios, and the simple relations connecting them.
Relations between trigonometrical ratios of angles differing by multiples of right angles.
Trigonometrical transformations.
Solution of triangles.
Properties of triangles.
Area of a circle.

(*e*) *Logarithms.*—The properties of logarithms.
Logarithmic series.
The use of logarithmic tables.

IV.—Elementary Physics and Chemistry.

(*a*) *General Ideas*—

Units of measurement, and definitions of mass, force, motion.
Laws of motion.
Work and energy—measurement of each.
Chief forces of nature.
General properties of solids, liquids, and gases.
Motions of translation and rotation.
Pressure of fluids and gases; measurement of pressure.
Equilibrium of floating bodies.
Specific gravity and its determination.
Motion of pendulum.

(*b*) *Heat*—

Laws of expansion of solids, liquids, and gases under heat.
Measurement of temperature.
Maximum density of water.
Changes of molecular state, and latent heat of molecular changes of state.
Influence of change of pressure on the boiling point and melting point.
Laws of pressure of gases.
Elastic force of vapour.
Radiation, conduction, and convection of heat.
Phenomena of combustion.
Steam engines.
Specific Heat.

(*c*) *Light*—

Laws of transmission of light and of its intensity.
Shadows.
Photometry.
Reflection of light.
Refraction of light.
Images by reflection and refraction, and their position.
Critical angle.
Properties of prisms and lenses.
Telescope, microscope, spectroscope.
Decomposition of light.

(*d*) *Frictional Electricity*—

Electrical attractions and repulsions.
Properties of conductors and non-conductors.

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Electrical induction.
Electrical force and density.
Electrical distribution on conductors.
Power of points.
Ramsden's electrical machine.
Condenser; electrophorus; Leyden jar.
Electric discharges.

(*e*) *Dynamic Electricity*—

Voltaic pile, its modifications.
Effects of the current.
Electro-dynamics.
Electro-magnetism.
Voltaic induction.
Thermo-electricity.

(*f*) *Easier parts of the Chemistry of non-metals.*

V AND B.—HISTORY.

The outlines of the History of Greece and Rome.

The Historical questions shall include questions relating to the geography of the countries to which they refer.

V AND A.—LOGIC.

Definition of Logic. Relation of Logic to other Sciences. Logic, Formal and Material, Inductive and Deductive. Fundamental Principles of Deductive Logic.

Names and their Import. Terms and their various Divisions. Denotation and Connotation of Terms. Opposition of Terms. Divisions and Definition.

Propositions, their Import and their various Divisions. Opposition of Propositions. Distribution of Terms. Predicables.

Inference, Immediate and Mediate, Inductive and Deductive.

Different Forms of Immediate Inference, Syllogism, its Canons, its Rules, its Figures and Moods; Reduction; various kinds of Syllogism and their Rules. Trains of Reasoning. Fallacies.

C.—PHYSIOLOGY.

D.—SANITARY SCIENCE.

1. *Introduction.*—Meaning of the terms Sanitation and Hygiene. Objects in view in studying these subjects. Division into two great subjects —public health and personal health.

2. *General functions of the body.*—Anatomy and Physiology. Treatment of the two subjects together in a very elementary manner, so as to teach something of digestion, circulation of the blood, respiration, secretion, and excretion, &c.

3. *Water.*—Importance of its purity. Sources—rivers, tanks, wells, and their relative value. Composition. Characters and classifications of potable waters. Origin of impurities. Purification. Prevention of pollution of tanks, wells and rivers. Diseases caused by impure supply. Artificial water-supply and the different ways of effecting it. Water works, &c.

4. *Air.*—Composition. Impurities. Effect of human beings, animals

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and plants on the air. Cubic space necessary for each person. Dangers of overcrowding. Ventilation.

5. *Local conditions.*—Soil, climate, meteorology, sites for buildings, influence of swamps, vegetation, winds, rainfall, temperature, and humidity. Diseases connected with the soil.

6. *Food and diet.*—Classification, uses and physiology, animal and vegetable food. Principles of diet. Cooking and preparation of food. Hours for meals. Effects of excess or deficiency of food. Condiments. Effects of unwholesomeness. Adulteration. Food in use in native homes. Diseases connected with food.

7. *Disease.*—Contagion. Epidemics. Modern ideas as to the causes of epidemic and endemic disease amongst men and animals. Bacteriology, Cholera, small-pox, plague, malarial fevers, &c. Prevention by segregation, disinfection, heat, &c.

8. *Personal Hygiene.*—Habits, exercise, sleep, cleanliness, washing, attention to the skin and bowels. Parasites. Clothing. Effects of early marriage. Care of children. Effects of excess and intemperance; of tobacco, opium, and other articles of a similar kind.

9. *Waste and impurities.*—Disposal of excreta, sewage, and refuse. Latrines. Offensive trades. Drainage. Disposal of the dead. Diseases connected with filth.

10. *Vital statistics.*—Reasons why they are necessary.

11. *Sanitary Inspections and Sanitary Law.*—Reasons why they are necessary, Duties of the citizen as regards sanitation.

Instruction is best afforded by lectures which need not exceed 20 in number. They should be extremely practical, as well as of a popular character, and in many of the sections will necessarily be quite elementary; they should be illustrated by simple experiments and demonstrations.

8. An optional paper, requiring an original composition in Bengali, Hindi Urdu or Uriya, shall be set at the F.A. examination, proficiency in which shall entitle a candidate to a special certificate, but shall not be counted towards a pass.

BACHELOR OF ARTS.

(*To be in force until the Examination of* 1908.)

1. An examination for the degree of Bachelor of Arts shall be held annually in Calcutta and such other places* as shall from time to time be appointed by the Syndicate, and shall commence at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

2. Any undergraduate of the University may be admitted to the examination, provided he has prosecuted a regular course of

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* The following places have already been appointed :—
Barisal, Bhagalpur, Cooch-Behar, Dacca, Hazaribagh, Hughli, Katak, Patna, Rampur-Baulia, and Rangoon.

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study in any affiliated Institution for not less than two academical years after passing the First Examination in Arts.* No candidate shall be considered to have prosecuted a regular course of study unless he has attended at least 66 per cent. of the lectures delivered in the Institution to which he belongs, in each of the subjects in which he is to be examined.† This percentage shall be calculated on the total number of lectures in each subject delivered in the Institution from the commencement of the academical year after the summer vacation. If a student is transferred from one Institution to another in the course of a year, the percentage of attendances in the second Institution shall be calculated on the total number of lectures on each subject delivered in that Institution after the date of the transfer certificate. If a student fails to enter an affiliated Institution before the 1st August in any year, his attendance for that year shall not, except with the special sanction of the Syndicate, be counted.

3. Any candidate may be examined either for a pass or for honours in any branch. A candidate, who desires to be examined for honours in any branch must take up instead of the pass subject the corresponding honour subject. A candidate who obtains honours in any branch will be considered to have also passed in that branch. Should a candidate not have deserved honours in any branch, the examiners shall be authorised to declare that he has passed in that branch, if they consider that his attainments come up to the pass standard.

4. Every candidate shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least six weeks before the date fixed for the commencement of the examination. If he desires to be examined for honours, he shall state in his application the subject or subjects in which he desires to be so examined.

5. A fee of thirty rupees shall be payable by each candidate. No candidate shall be admitted to the examination unless he shall have paid this fee to the Registrar. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to one or more subsequent examinations for the degree of Bachelor of Arts on payment of a like fee of thirty rupees on each occasion, provided he produces a certificate from the head of an affiliated Institution showing that his name

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* The Syndicate have power to make exceptions to this rule in favour of those Deputy Inspectors of Schools, Sub-Inspectors of Schools, and *bonâ fide* Masters of English Schools, who have served as such for the full period of two academical years. Their applications must be signed by the Inspector of Schools in whose circle they are employed.

† The Syndicate have power to make exceptions to this rule.

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has been on the rolls of that Institution for one academical year since the date of the last examination to which he was admitted,* and that he has attended 66⅔ per cent.† of the lectures delivered in the Institution during that academical year, in each of the subjects in which he is to be examined. A candidate who fails to present himself may be admitted to any one subsequent B.A. Examination on payment of half the fee.

6. The examination for the degree of Bachelor of Arts shall be conducted by means of printed papers.

7. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in alphabetical order, together with a list of those who have obtained honours in each branch, arranged in two divisions, both in order of merit. The names of those successful candidates, who have not prosecuted a regular course of study in an affiliated Institution shall be submitted to the Senate every year before the Convocation, with a view to their being admitted to the degree of B.A. At the examination for the degree of Bachelor of Arts, every candidate shall be examined in one or other of the two following courses marked A and B :—

A.‡

Pass Subjects.	*Corresponding Honour Subjects.*
I.—English.	I.—In addition to the pass subject, a further course in English, and the History of the English language and literature, and an original English essay.
II.—Mental and Moral Science, as defined below.	II.—In addition to the pass course, the History of Philosophy and Natural Theology, as defined below.

And one of the following :—

Pass Subjects.	*Corresponding Honour Subjects.*
III.—One of the following languages: Greek, Latin, Sanskrit, Pali, Hebrew, Arabic, and Persian.	III.—In addition to the pass course, Comparative Grammar, and a second course in the classical language.

* The Syndicate have power to make exceptions to this rule in the case of candidates who, after failing in the examination, have served as teachers for six months since the date of the last examination.

† The Syndicate have power to make exceptions to this rule.

‡ The text-books are fixed from time to time by the Syndicate. (*See Section VIII.*)

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Pass Subjects.	*Corresponding Honour Subjects.*
IV.—History of England and either History of Greece and Rome, or History of India together with the History of Hindu and Mahomedan Civilisation. Elements of Political Economy.	IV.—History of England, Greece, Rome and India, together with the History of Hindu and Mahomedan Civilisation, a fuller course of Political Economy than in the Pass Course and the Elements of Political Philosophy.
V.—Mathematics as in the B. Course.	V.—Mathem tics as in the B. Honour Course.

B.*

Pass Subjects.	*Corresponding Honour Subjects.*
I.—English.	I.—In addition to the pass subjects, a further course in English and the History of the English language and literature, and an original English essay.
II.—Mathematics. Statics. Dynamics. Hydrostatics. Descriptive Astronomy.	II.—In addition to the pass course Analytical Plane Geometry and the Differential and Integral Calculus, as defined below.
And one of the following :—	
III.—Physics and Chemistry, as defined below.	III.—A fuller course in Physics and Chemistry, together with the Doctrine of Scientific Method.
IV.—Physiology and either Botany or Zoology, as defined below.	IV.—Physiology, Botany and Zoology, together with the Doctrine of Scientific Method.
V.—Geology and either Mineralogy or Physical Geography, as defined below.	V.—Geology, Mineralogy and Physical Geography, together with the Doctrine of Scientific Method.

DEFINITION OF SUBJECTS.

Mental and Moral Science.†

The pass subjec's shall include—

(*a*) *Psychology*—

Philosophy and Psychology. Scope and Method of Psychology. Relation of Psychology to Metaphysics and Physiology.

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* The Text-books are fixed from time to time by the Syndicate. (*See Section VIII.*)

† The questions of Mental and Moral Science will have no special reference to the writing of any one author or school of authors. In matters of opinion answers will be judged according to their accuracy of thought and expression. The Honour papers in the subjects of the Pass Course shall consist of more advanced questions than the Pass papers.

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Mind, Consciousness, Self-consciousness. Analysis and Classifications of Mental Processes and Products. Development of Mental Life. Laws of Mind.

Psychology of Cognition. Perception and Sensation. The Senses and the Nervous System. Localisation of Sensation. Primary and Secondary Qualities of body. Object of Perception. Perception of the different Senses. Acquired Perceptions. Imagination, Expectation, Memory. Thinking, Conception, Judgment. Reasoning. Generalisation, Belief and Knowledge. Experience and Reason, Self, External World. Time. Space, Substance, Cause, Power.

Psychology of Feelings. Sense-feelings, Emotions and Sentiments, Pleasure and Pain. Psychology of the Will. Attention and Volition. Appetite and Desire. Instinct and Habit. Voluntary Action. Conflict of Motives. Deliberation, Choice. Freedom of the Will.

(*b*) *Logic*—

Definition and Province of Logic. Relation of Logic to Metaphysics and the Special Sciences. Thought, Knowledge, Truth, Science. Immediate and Mediate Knowledge. Intuitive and Inferential Truths.

Observation and Experiment. Analysis and Synthesis. Classification and Definition. Hypothesis and Explanation. Induction, Analogy, and Probability. The Ground of Induction. Experimental Methods. Deductive Method. Relation of Induction to Deduction. Demonstration, Syllogism, Functions of Syllogism.

(*c*) *Ethics*—

Scope and Method of Ethics. Relation of Ethics to Metaphysics, Psychology, Sociology, and Politics.

Analysis of the Moral Consciousness, Moral Sentiment, Moral Judgment, the Moral Faculty, Springs of Action and their Mutual Relation.

The Good or Ultimate End of Action. Moral Obligation. Standards of Right and Wrong. Sanctions of Morality. The Individual and Society. Duties and Virtues.

The Honour subjects shall include—

(*a*) *Natural Theology*—

Theology and Religion. Natural and Revealed, Relation of Religion to Metaphysics and Ethics.

Analysis of the Religious Consciousness; The Religious Sentiment, the Religious Faculty, the Sense of Dependence, the Idea of the Infinite, the Causal Belief, the Sense of Duty, the Belief and Worship of God, the Belief in a Future Life.

God, Man and Nature. The Existence and Attributes of God. The Relation of God to Nature and Man. Theory of the Universe. Theism, Pantheism, Agnosticism, Materialism, Panphenomenalism, Optimism, Pessimism, Teleology, Evolution. Necessity and Freedom. Immortality of the Soul.

(*b*) *History of Philosophy*—

General Knowledge of the Systems of Bacon, Descartes, Spinoza, Locke, Berkeley, Hume, Reid, Leibnitz, Kant, Cousin, Hamilton, and Mill; and Special Study of subjects to be selected from year to year.

Mathematics.

The Pass subjects shall include—

(*a*) *Statics*—

Parallelogram and triangle of forces.
Resultant of parallel forces.

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Couples.
Moments.
Equilibrium, conditions of equilibrium of any forces acting on a particle or rigid body.
Centre of parallel forces.
Centre of gravity, or centroid.
Friction.
Simple cases of tension of strings.
Levers; pulley; wheel and axle; inclined plane; screw.
Virtual velocities.

(*b*) *Dynamics*—

Definition and measurement of mass, force, velocity, acceleration, momentum, work, and energy.
Laws of motion.
Uniform motion.
Uniformly accelerated motion.
(1) in a straight line.
(2) in a parabola.
(3) in a circle.
Simple cases of impact.
Simple harmonic motion.

(*c*) *Hydrostatics*—

The transmission and intensity of fluid pressure.
Determination of component and resultant fluid pressure in simple cases.
Centre of pressure.
Conditions of equilibrium of floating bodies.
Metacentre.
Properties of elastic fluid and determination of pressure.
Specific gravity, and the methods of determining it.
Measurement of heights by the barometer.
Mixture of gases.
Description of the barometer, air-pump, common and force pumps, the diving-bell, the balloon, siphon and Bramah's press, as applications of hydrostatical principles.

The Honour subjects shall include—

(*a*) *Analytical Plane Geometry*—

Cartesian and polar co-ordinates.
Transformation of co-ordinates.
The straight line.
The circle.
The parabola.
The ellipse.
The hyperbola,
The general equation of the second degree.

(*b*) *Differential Calculus*—

Definition of differential coefficients.
Differentiation of functions of a single variable.
Successive differentiation.
Taylor's and Maclaurin's theorems and their simpler applications.
Evolution of function which assume an indeterminate form.
Differentiation of functions and implicit functions.
Maxima and minima values of functions of one variable.

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Tangents, normals, asymptotes, curvature, singular points, evolutes, involutes.
Tracing of curves.

(c) *Integral Calculus*—

Integration of simple functions of a single variable.
Integration of rational fractions.
Integration by formulæ of reduction.
Determination of lengths and areas of curves.

Physics and Chemistry.

The Pass Course in Physics shall include—

(a) *General Ideas*—

1.—Wave motion :
Measurement of simple or harmonic wave motions.
Combination of wave motions.
Resolution of complex wave motions into simple or harmonic wave motion.

2.—Potential :
Definition of Potential.
Calculation of potential in simple cases.
Determination of force from potential.
Fundamental propositions respecting lines of force, equipotential surfaces, and tubes of force.

3.—Elasticity :
Definition of elasticity.
Measurement of elasticity in the cases of solids, liquids, and gases.

(b) *Heat*—

A more thorough acquaintance with the subject than that required for the First Arts Examination and a greater power of working problems on heat.

(c) *Light*—

In this subject more difficult questions in the determination of foci, focal lengths, &c., will be required than for the First Arts Examination.

(d) *Frictional Electricity*—

This subject must now be taken up in connection with potential.

(e) *Sound*—

The laws of the production and propagation of sound determined experimentally.
Intensity, pitch, and quality of sounds.
The velocity of sound in air and other media ; Doppler's principle.
Reflection and refraction of sound.
Measurement of sound vibrations and wave lengths of air.
Resonance.
Interference of sound waves. Beats.
Harmonic tones ; their generation and function in sound.
Longitudinal vibration of rods and of columns of air.
Transverse vibration of strings.

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Formation of Chladni's figures.
Vibrations of tuning-forks and bells.
Nature of musical sound.
Vocal organs of man.

(*f*) *Dynamical Electricity*—

Voltaic batteries as sources of electric currents.
Action of currents on magnetic needles. Galvanometers.
Thermo-electric current.
Definition and measurement of electric force, conductivity, resistance and current.
Ohm's law, and its simpler applications.
Laws of action of currents on currents, and their simpler applications.
Solenoids. Ampere's theory of magnetism.
Electro-magnets.
Mechanical, chemical, and heating effects of currents. Electrolysis.
Ruhmkorff's coil.
Electro-magnetic currents.
Electro-magnetic machines; the more important details of the working of telegraphs.
Theories of electricity.

(*g*) *Magnetism*—

Properties of permanent artificial magnets.
Magnetic Induction.
Phenomena of terrestrial magnetism.
Determination of declination, dip, and intensity of the magnetic force of the earth.
The compass needle.
Methods of magnetisation.
Determination of magnetic laws of action by the torsion balance.
Magnetic potential.

The Pass Course in Chemistry shall include—

(*a*) The following general considerations :—

Definition of Chemistry; differences between chemical action and the action of the physical forces; simple and compound matter; different modes of chemical action; principles of chemical nomenclature; laws of chemical combination; the atomic theory; determination of molecular and atomic weights; symbolic notation; a fairly complete knowledge of atomicity or quantivalence, artiads, perissade, &c.; variations of atomicity; absolute, latent, and active atomicity; graphic notation; chemical equations; calculations of formulæ; compound radicals; classification of elements; relations between atomic weight and quantivalence; physical and chemical relations of atomic weights; specific or atomic volumes; molecular volumes; chemical affinity; influence of pressure on chemical action; relations of heat to chemical affinity; thermochemistry; isomerism and allotropy; solution.

(*b*) A fairly complete knowledge of the modes of occurrence, methods of preparation, properties, uses, and general characters of the following non-metallic elements, of their allotropic modifications, and of their principal and best-known compounds :—

Hydrogen, fluorine, chlorine, bromine, iodine.
Oxygen (and ozone).
Boron.

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Carbon, silicon.
Nitrogen, phosphorus, arsenic.
Sulphur.

(*c*) A general knowledge of—

The distinction between metals and non-metals; physical properties of metals; chemical relations of metals; alloys; acids; bases and salts; the constitution of salts; theory of normal, acid, and basic salts; general characters and general methods of preparation of compounds of metals with non-metals; the principles of crystallography; isomorphism; outlines of the principles of qualitative analysis.

(*d*) A knowledge of the methods of preparation, properties, and uses of the following metals and principal salts:—

Sodium, potassium, ammonium, silver.
Calcium (glass manufacture, &c.), magnesium, zinc, copper, mercury.
Gold.
Lead, tin, platinum, aluminium (porcelain, pottery, &c.).
Antimony, bismuth.
Chromium, manganese, iron.

The Honour Course in Physics shall include in addition to the subjects of the Pass Course—

(*a*) *Heat*—

An elementary knowledge of the principles of thermo-dynamics.

(*b*) *Light*—

Spherical abberation.
Dispersion.
The formation of rainbows.

(*c*) *Polarization of Light*—

Undulatory theory of Light.
Reflection and Refraction of Light.
Prismatic analysis of light.
Achromatism.
Explanation of lines in the solar and other spectra.
Interference of light.
Diffraction of light.
Measurement of wave lengths of light.
Colours of thin plates.
Double refraction.
Polarization of light by reflection, refraction and double refraction.
Interference of polarized light as shown by double refracting crystals.
Polariscopes.
Elliptic and circular polarization.
Rotatory polarization.

The Honour Course in Chemistry shall include in addition to a fuller knowledge of the subjects of the Pass Course—

Inorganic Chemistry—

(*a*) Study of the following elements:—

Selenium, tellurium, lithium, cœsium, rubidium, barium, strontium, the earth metals, cadmium, indium, gallium, titanium, vanadium, uranium, tungsten, molybdenum, nickel, cobalt, and the platinum metals.

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(*b*) A knowledge of the methods used in the preparation of the more important acids, salts, &c., employed in the arts and manufactures.

(*c*) A knowledge of metallurgical operations, such as are employed, in the preparation of iron, zinc, copper, lead, tin, mercury, silver, and aluminium.

Organic Chemistry—

(*a*) Definition of Organic Chemistry.

Constituents of organic bodies, synthesis from inorganic materials.

Sources of compounds, purification of compounds.

Determination of boiling point, melting point, and other physical properties of organic bodies.

Preparation of bodies for analysis.

Analysis of organic bodies, methods of determining empirical, molecular, structural formulæ.

Detailed classification of organic bodies, homologous series.

Isomerism, including its various kinds.

Theory of organic radicals.

(*b*) A knowledge of the methods of preparation, properties, and reactions, together with relations to one another, of a few typical bodies belonging to each of the various classes of organic compounds (excluding those belonging to the so-called aromatic series), derived from hydrocarbons containing not more than five atoms of carbon.

Practical Chemical Analysis—

A practical knowledge of the qualitative analysis of inorganic substances will be required. At the examination substances will be given for analysis containing not more than two bases.

Physiology, Botany, and Zoology.

Physiology shall include—

(*a*) A course of practical instruction in Elementary Physiology.

(*b*) General physiology.

Botany shall include—

(*a*) The morphology and histology of flowering plants: the general principles of their classification on the systems of Linnæus and De Candolle with a detailed acquaintance with the characters of the following Natural Orders:—

Anonaceæ.
Menispermaceæ.
Nymphæaceæ.
Papaveraceæ.
Cruciferæ.
Malvaceæ.
Sterculiaceæ.
Tiliaceæ.
Rubiaceæ.
Aurantiaceæ.
Ampelideæ.
Anacardiaceæ.
Leguminosæ.
Myrtaceæ.
Combretaceæ.
Cucurbitaceæ.
Umbelliferæ.
Amaranthaceæ.
Compositæ.
Apocyneæ.
Asclepiadaceæ.
Convolvulaceæ.
Solanaceæ.
Boragineæ.
Acanthaceæ.
Verbenaceæ.
Labiateæ.
Urticaceæ.
Euphorbiaceæ.
Palmeæ.
Aroideæ.
Commelynaceæ.
Orchidaceæ.
Scitamineæ.
Cyperaceæ.
Gramineæ.

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(*b*) A general acquaintance with the morphology, histology, and classification of cryptogams.

(*c*) Vegetable physiology.

Zoology shall include—

(*a*) Embryonic development and comparative anatomy of the principal orders of animals, ordinal classification of the animal kingdom, and generic classification of one selected order of Vertebrata and one of Invertebrata, to be notified beforehand. The geographical distribution and habits of animals. The species of the mammals of India, omitting the micro-mammals, *viz.*, Insectivora, Rodentia, and Cheiroptera; and the Indian genera of one order of Reptilia and one of Aves, to be previously notified.

(*b*) Special Physiology of the Vertebrata.

(*c*) Special Physiology of the Invertebrata.

Geology, Mineralogy, and Physical Geography

Geology shall include—

The classification, structure, and formation of rocks. The evidence of past changes afforded by their present condition, and a practical acquaintance with their mineral characteristics, to be tested by specimens. The generic determination of the most characteristic fossil forms, and the indications of age and habit which they afford. A practical knowledge of fossil forms to be tested by specimens. A general knowledge of the geology of Great Britain and Western Europe, and a more detailed knowledge of the geology of India. An acquaintance with geological maps to be tested by the construction of a geological section from a given map.

Mineralogy shall include—

(*a*) General characteristics of minerals.

(*b*) Crystallography of the structure of minerals, fundamental forms of crystals, cleavage, secondary forms, compound crystals, diamorphism, irregularities of crystals, measuring angles of crystals, massive minerals, columnar structure, lamellar, and granular structure, pseudomorphous crystals.

(*c*) Physical properties of minerals; lustre, colour, diaphaneity, refraction and polarization, phosphorescence, electricity and magnetism, specific gravity, hardness, state of aggregation, fracture, taste, odour.

(*d*) Chemical properties of minerals; action of acids, &c., on minerals; blow-pipe re-actions of minerals.

(*e*) Classification of minerals.

(*f*) Description and recognition of the more important minerals and rocks of mineral aggregates.

(*g*) Chemical composition and formulæ of minerals.

Physical Geography shall include—

The form and density of the earth, and modes of ascertaining them. The distribution and characteristic geographical phenomena of land and water. Climate and its determining causes. The inorganic physical geography of India. Meteorology.

8. An optional paper, requiring an original composition in Bengali, Hindi, Urdu, or Uriya, shall be set at the B.A. Examination, proficiency in which shall entitle a candidate to a special certificate, but shall not be counted towards a pass.

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BACHELOR OF SCIENCE.

(To be in force until the Examination of 1908.)

1. An examination for the degree of Bachelor of Science shall be held annually in Calcutta, and shall commence at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

2. Any undergraduate of the University may be admitted to the Examination, provided he has prosecuted, in an Institution affiliated up to the B.Sc. Standard, a regular course of study for not less than two academical years after passing the First Examination in Arts. No candidate shall be considered to have prosecuted a regular course of study unless he has attended at least 66 per cent.* of the lectures delivered in the Institution to which he bel ngs in each of the subjects in which he is to be examined. This percentage shall be calculated on the total number of lectures in each subject delivered in the Institution from the commencement of the academical year after the summer vacation. If a student is transferred from one Institution to another in the course of a year, the percentage of attendances in the second Institution shall be calculated on the total number of lectures in each subject delivered in that Institution after the date of the transfer certificate. If a student fails to enter an affiliated Institution before the 1st August in any year, his attendance for that year shall not, except with the special sanction of the Syndicate, be counted.

3. Every candidate shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least six weeks before the date fixed for the commencement of the Examination. If he desires to be examined for Honours, he shall state in his application the subject in which he desires to be so examined.

4. A fee of thirty rupees shall be payable by each candidate. No candidate shall be admitted to the examination unless he shall have paid this fee to the Registrar.

A candidate who fails to pass, or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to one or more subsequent examinations for the degree of Bachelor of Science on payment of a like fee of thirty rupees on each occasion, provided he produces a certificate from the head of an Institution affiliated up to the B.Sc. Standard, showing that his name has been on the rolls of such Institution for six calendar months since the date of the last examination to whi h he was admitted, and that he has attended 66 per cent.* of the lectures delivered in the Institution

* The Syndicate have power to make exceptions to this rule.

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during those six months in each of the subjects in which he is to be examined. A candidate who fails to present himself may be admitted to any one subsequent B.Sc. examination on payment of half the fee.

5. The examination for the degree of Bachelor of Science shall be conducted by means of printed papers, and there shall be a simple practical examination in all subjects other than English and Mathematics.

6. At the examination for the degree of Bachelor of Science every candidate shall be examined in the following subjects, for Pass or Honours, as selected :—

COMPULSORY SUBJECTS.

Pass Subjects. As defined below :—	*Honour Subjects.* As defined below :—
I.—English	There is no Honour Course in English.
II.—Mathematics—	Mathematics—
Statics and Dynamics ..	Statics, Dynamics, Hydrostatics, Astronomy, Plane Analytical Geometry, Differential and Integral Calculus.
III.—Physics	Physics—a fuller course.
IV.—Chemistry	Chemistry—a fuller course.

OPTIONAL SUBJECTS.

Any two of the following :—

V.—Physiology	Physiology—a fuller course.
VI.—Botany	Botany—a fuller course.
VII.—Zoology	Zoology—a fuller course.
VIII.—Geology	Geology—a fuller course.
IX.—Mineralogy	Mineralogy—a fuller course.
X.—Mathematics—	Mathematics—
Hydrostatics and Astronomy.	Statics, Dynamics, Hydrostatics, Astronomy, Plane Analytical Geometry, Differential and Integral Calculus.

7. Honours may be taken in any two or more of the subjects selected, but candidates who wish to take Honours in Mathematics shall be required to take up the entire Honours Course in that subject, which will be considered equivalent to two ordinary subjects. A candidate may obtain the degree of B.Sc. after examination in English, Physics, Chemistry, and any two of the other subjects provided he obtains Honours in at least three subjects (English excepted), Mathematics counting as a double subject.

8. DEFINITION OF SUBJECTS.

I.—ENGLISH.

The examination in English shall be conducted mainly as a test in composition. One paper shall be set requiring short essays to be written on

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some portion of a subject in (*a*) Physical Science or Chemistry, and (*b*) in one other of the optional subjects taken up by the candidate.

II AND X.—MATHEMATICS.

The Pass Course shall include—

(*a*) *Statics*—

Parallelogram and triangle of forces.
Resultant of parallel forces.
Couples.
Moments.
Equilibrium, conditions of equilibrium of any forces acting on a particle or rigid body.
Centre of parallel forces.
Centre of gravity or centroid.
Friction.
Simple cases of tension of strings—
Levers; pulley; wheel and axle; inclined plane; screw.
Virtual velocities.

(*b*) *Dynamics*—

Definition and measurement of mass, force, velocity, acceleration, momentum, work, and energy.
Laws of motion.
Uniform motion.
Uniformly accelerated motion—

(1) in a straight line;
(2) in a parabola
(3) in a circle.

Simple cases of impact.
Simple harmonic motion.

(*c*) *Hydrostatics*—

The transmission and intensity of fluid pressure.
Determination of component and resultant fluid pressure in simple cases.
Centre of pressure.
Condition of equilibrium of floating bodies.
Metacentre.
Properties of elastic fluid and determination of pressure.
Specific gravity and the methods of determining it.
Measurement of heights by the barometer.
Mixture of gases.
Description of the barometer, air-pump, common and force pumps, the diving-bell, the balloon, siphon, and Bramah's press, as applications of hydrostatical principles.

The Honour Course shall include in addition to a fuller knowledge of the subjects of the Pass Course—

(*a*) *Analytical Plane Geometry*—

Cartesian and polar co-ordinates.
Transformation of co-ordinates.
The straight line.
The circle.

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The parabola.
The ellipse.
The hyperbola.
The general equation of the second degree.

(*b*) *Differential Calculus*—

Definition of differential coefficients.
Differentiation of functions of a single variable.
Successive differentiation.
Taylor's and Maclaurin's theorems, and their simpler applications.
Evolution of functions which assume an indeterminate form.
Differentiation of functions and implicit functions.
Maxima and minima values of functions of one variable.
Tangents, normals, asymptotes, curvature, singular points, evolutes, involutes.
Tracing of curves.

(*c*) *Integral Calculus*—

Integration of simple functions of a single variable.
Integration of rational fractions.
Integration by formulæ of reduction.
Determination of lengths and areas of curves.

III.—Physics.

The Pass Course shall include—

(*a*) *General Ideas*—

1.—Wave motion :
Measurement of simple or harmonic wave motions.
Combination of wave motions.
Resolution of complex wave motions into simple or harmonic wave motions.

2.—Potential :
Definition of potential.
Calculation of potential in simple cases.
Determination of force from potential.
Fundamental propositions respecting lines of force, equipotential surfaces and tubes of force.

3.—Elasticity :
Definition of elasticity.
Measurement of elasticity in the cases of solids, liquids, and gases.

(*b*) *Heat*—

A more thorough acquaintance with the subject than that required for the First Examination in Arts and a greater power of working problems on heat.

(*c*) *Light*—

In this subject more difficult questions in the determination of foci, focal lengths, &c., will be required than for the First Examination in Arts.

(*d*) *Frictional Electricity*—

This subject must now be taken up in connection with potential.

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(*e*) *Sound*—

The laws of the production and propagation of sound determined experimentally.
Intensity, pitch, and quality of sounds.
The velocity of sound in air and other media ; Doppler's principle.
Reflection and refraction of sound.
Measurement of sound vibrations and wave lengths of air.
Resonance.
Interference of sound waves. Beats.
Harmonic tones ; their generation and function in sound.
Longitudinal vibration of rods and of columns of air
Transverse vibration of strings.
Formations of Chaldni's figures.
Vibrations of tuning-forks and bells.
Nature of musical sounds.
Vocal organs of man.

(*f*) *Dynamical Electricity*—

Voltaic batteries as sources of electric currents.
Action of currents on magnetic needles. Galvanometers.
Thermo-electric currents.
Definition and measurement of electric force, conductivity, resistance and current.
Ohm's law and its simpler applications.
Laws of actions of currents on currents, and their simpler applications.
Solenoids. Ampere's theory of magnetism.
Electro-magnets.
Mechanical, chemical, and heating effects of currents. Electrolysis.
Induced currents ; their modes of generation and laws of action.
Ruhmkorff's coil.
Electro-magnetic currents.
Electro-magnetic machines, the more important details of the working of telegraphs.
Theories of electricity.

(*g*) *Magnetism*—

Properties of permanent and artificial magnets.
Magnetic induction.
Phenomena of terrestrial magnetism.
Determination of declination, dip and intensity of the magnetic force of earth.
The compass needle.
Methods of magnetisation
Determination of magnetic laws of action by the torsion balance.
Magnetic potential.

Practical Examination—Examination in the use of Physical apparatus, with experiments in illustration of the leading principles of the subjects of examination.

The Honour Course shall include in addition to the subjects of the Pass Course—

(*a*) *Heat*—

An elementary knowledge of the principles of thermo-dynamics.

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(*b*) *Geometrical Optics*—

Spherical aberration.
Dispersion.
Prismatic analysis of light.
Explanation of lines in the solar and other spectrum.
The formation of rainbows.

(*c*) *Wave Theory of Light*—

Interference of light.
Diffraction of light.
Measurement of wave lengths of light.
Colours of thin plates.
Double refraction.
Polarization of light by reflection, refraction, and double refraction.
Interference; polarized light as shown by double refracting crystals.
Polariscopes.
Elliptic and circular polarization.
Rotatory polarization.

Practical Examination :—

A more difficult examination of the same nature as for the Pass Course.

IV.—CHEMISTRY.

The Pass Course shall include—

(*a*) The following general considerations :—

Definition of Chemistry; differences between chemical action and the action of the physical forces; simple and compound matter; different modes of chemical action; principle of chemical nomenclature; laws of chemical combination; the atomic theory; determination of molecular and atomic weights; symbolic notation; a fairly complete knowledge of atomicity or quantivalence; artiads, perissads, &c.; variations of atomicity; absolute, latent, and active atomicity; graphic notation; chemical equations; calculation of formulæ; compound radicals; classification of elements; relations between atomic weight and quantivalence; physical and chemical relations of atomic weights; specific or atomic volumes; molecular volumes; chemical affinity; influence of pressure on chemical actions; relations of heat to chemical affinity; thermo-chemistry; isomerism and allotropy; solution.

(*b*) A fairly complete knowledge of the modes of occurrence, methods of preparation, properties, uses, and general characters of the following non-metallic elements, of their allotropic modifications and of their principal and best-known compounds :—

Hydrogen, fluorine, chlorine, bromine, iodine.
Oxygen (and ozone).
Boron.
Carbon, silicon.
Nitrogen, phosphorus, arsenic.
Sulphur.

(*c*) *A general knowledge of*—

The distinction between metals and non-metals; physical properties of metals; chemical relations of metals; alloys; acids, bases, and salts;

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the constitution of salts; theory of normal, acid, and basic salts; general characters and general methods of preparation of compounds of metals with non-metals: the principles of crystallography; isomorphism; outline of the principles of qualitative analysis.

(*d*) A knowledge of the methods of preparation, properties, and uses of the following metals and principal salts:—

Sodium, potassium, ammonium, silver.
Calcium (glass manufacture, &c.), magnesium, zinc, copper, mercury.
Gold.
Lead, tin, platinum, aluminium (porcelain, pottery, &c.)
Antimony, bismuth.
Chromium, manganese, iron.

Practical Examination—

Candidates will be tested as to their power of manipulation and in simple qualitative analysis, consisting in the detection of the more commonly-occurring bases and inorganic acids in given compounds, each substance to contain not more than one Base and one Acid.

The Honour Course shall include in addition to a fuller knowledge of the subjects of the Pass Course—

Inorganic Chemistry—

(*a*) Study of the following elements:

Selenium, tellurium, lithium, cæsium, rubidium, barium, strontium, the earth metals, cadmium, indium, gallium, titanium, vanadium, uranium, tungsten, molybdinum, nickel, cobalt, and the platinum metal.

(*b*) A knowledge of the methods used in the preparation of the more important acids, salts, &c., employed in the arts and manufactures.

(*c*) A knowledge of metallurgical operations, such as are employed in the preparation of iron, zinc, copper, lead, tin, mercury, silver, and aluminium.

Organic Chemistry—

(*a*) Definition of organic Chemistry:

Constituents of organic bodies, synthesis from inorganic materials.
Sources of compounds, purification of compounds.
Determination of boiling point, melting point and other physical properties of organic bodies.
Preparation of bodies for analysis.
Analysis of organic bodies, methods of determining empirical, molecular and structural formulæ.
Detailed classification of organic bodies, homologous series.
Isomerism, including its various kinds.
Theory of organic radicals.

(*b*) A knowledge of the methods of preparation, properties, and reactions together with the relations to one another, of a few typical bodies belonging to each of the various classes of organic compounds (excluding those belonging to the so-called aromatic series), derived from hydrocarbons containing not more than five atoms of carbon.

Practical Examination—

Candidates will have to show a fuller knowledge of manipulation. A practical knowledge of the qualitative analysis of inorganic substances will

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also be required. Substances will be given for analysis containing not more than two Acids and two Bases.

V.—PHYSIOLOGY.

The Pass Course shall include—

Chemical composition of Food. The quantities and kinds of Food required to balance the losses of the economy.

The several processes to which the Food is subjected in Digestion.

Absorption in general; chyliferous and lymphatic Absorption.

The Blood, its organic and chemical constitution; phenomena and mechanism of circulation.

Respiration, its mechanical and chemical actions; effects of its suppression.

Temperature of the Body; production and regulation of Animal Heat.

Secretion and Excretion; construction and operation of Secreting Apparatus. Chemical composition and amount of the Urinary, Cutaneous, and Pulmonary excretions.

Muscular and other Contractile substance; phenomena presented by acting Contractile substance.

Nutrition, Growth, and Reparation.

The mechanism of Locomotion, Voice, and Speech.

Constitution and Functions of Nervous System. Distinctions of motor and Sensory Nerves or Nerve-fibres. Phenomena presented by Nerves in action. Influence on Contractile Tissue.

Functions of Brain, Spinal Cord, and Ganglia, Sensation, Voluntary Motion, Reflex Actions, Inhibitory Action, Influence of Nervous System on Heart and Blood vessels and on Secreting organs.

Organs of the Senses and their functions.

Reproductive Organs and their functions.

Changes produced in the Ovum by impregnation. Outline of the Development of the Embryo and its Envelopes. Nutrition of the Fœtus. Changes which occur at Birth in the Fœtus and in the parent. Lactation.

Changes which take place with Age in the Proportions of the Body; in the Skeleton; in the Dentition and in the Reproductive apparatus.

Differences between Man and Woman other than in the Reproductive Organs.

Senile Decay.

Somatic and Molecular Death.

Practical Examination.—Each candidate must be prepared (1) to examine and describe Microscopical Specimens of Animal tissues and organs; (2) to make Microscopical preparations of Animal tissues and organs; (3) to prove his practical acquaintance with the chemistry of albumen and its allies, milk, the digestive juices and their actions, blood, urine and glycogen. Also to show his practical acquaintance with the most important Apparatus used in studying the Physiology of muscle, nerve, the circulatory and respiratory systems and the organs of sense.

The Honour Course shall include the same subjects as the Pass Course, treated more fully, and the practical examination will be more thorough.

VI.—BOTANY.

The Pass Course shall include—

(*a*) The morphology and histology of flowering plants; the genera principles of their classification on the systems of Linnæus and De

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Candolle, with a detailed acquaintance with the characters of the following natural orders :—

Anonaceæ.	Tiliaceæ.
Menispermaceæ.	Rubiaceæ.
Nymphæaceæ.	Aurantaceæ.
Papaveraceæ,	Solanaceæ.
Cruciferæ.	Borragineæ.
Cucurbitaceæ.	Acanthaceæ.
Umbelliferæ.	Verbenaceæ.
Amarantaceæ.	Labiatæ.
Compositæ.	Urticaceæ.
Apocyneæ.	Euphorbiaceæ.
Asclepiadaceæ.	Ampelideæ.
Convolvulaceæ.	Anacardiaceæ.
Malvaceæ.	Leguminosæ.
Sterculiaceæ.	Myrtaceæ.
Combretaceæ.	Orchidaceæ.
Palmeæ.	Scitamineæ.
Aroideæ.	Cyperaceæ.
Commelynaceæ.	Gramineæ.

(*b*) A general acquaintance with the morphology, histology, and classification of cryptogams.

(*c*) Vegetable Physiology.

Practical Examination.—Each candidate must be prepared to dissect and to examine with the simple or compound Microscope, or with both, any plants or part of plants placed before him selected with reference to their typical character, as representing their respective groups, and to write descriptions of them.

The Honour Course shall include the same subjects as the Pass Course, treated more fully, and the practical examination will be more thorough.

VII.—Zoology.

The Pass Course shall include—

(*a*) Embryonic development and comparative anatomy of the principal orders of animals, ordinal classifications of the Animal Kingdom, and generic classification of one selected order of Vertebrata and one of Invertebrata, to be notified beforehand. The geographical distribution and habits of animals. The species of the mammals of India, omitting the micro-mammals, *viz.*, Insectivora, Rodentia, and Cheiroptera; and the Indian genera of one order of Reptilia and one of Aves, to be previously notified.

(*b*) Special Physiology of the Vertebrata.

(*c*) Special Physiology of the Invertebrata.

Practical Examination.—Candidates will be tested practically by description of the whole parts of skeletons and skulls, and by dissection of animals selected from a list to be issued by the Syndicate from time to time.

The Honour Course shall include the same subjects as the Pass Course, treated more fully, and the practical examination will be more thorough.

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VIII.—GEOLOGY.

The Pass Course shall include—

The classification, structure, and formation of rocks. The evidence of past changes afforded by their present condition, and a practical acquaintance with their mineral characteristics, to be tested by specimens. The generic determination of the most characteristic fossil forms, and the indications of age and habit which they afford. A practical knowledge of fossil forms to be tested by specimens. A general knowledge of the geology of Great Britain and Western Europe, and a more detailed knowledge of the geology of India. An acquaintance with geological maps to be tested by the constructions of a geological section from a given map.

Practical Examination.—Candidates will be expected to identify and describe specimens of the Principal Rocks, and of the fossils characteristic of the leading stratigraphical subdivisions. They will also be expected to draw geological maps and sections, and to explain the meaning and application of models.

The Honour Course shall include the same subjects as the Pass Course, treated more fully, and the practical examination will be more thorough.

IX.—MINERALOGY.

The Pass Course shall include—

(*a*) General characteristics of minerals.

(*b*) Crystallography or the structure of minerals, fundamental forms of crystals, cleavage, secondary forms, compound crystals, diamorphism, irregularities of crystals, measuring angles of crystals, massive minerals, columnar structure, lamellar and granular structure, pseudomorphous crystals.

(*c*) Physical properties of minerals: lustre, colour, diaphaneity, refraction and polarization, phosphorescence, electricity and magnetism, specific gravity, hardness, state of aggregation, fracture, taste, odour.

(*d*) Chemical properties of minerals; action of acids, &c., on minerals; blow-pipe re-actions of minerals.

(*e*) Classification of minerals.

(*f*) Description and recognition of the more important minerals and rocks or mineral aggregates.

(*g*) Chemical composition and formulæ of minerals.

Practical Examination.—Candidates will be expected to identify specimens of well-known minerals and describe their properties.

The Honour Course shall include the same subjects as the Pass Course, treated more fully, and the practical examination will be more thorough.

9. A candidate who desires to be examined for Honours in any branch must take up, instead of the Pass subject, the corresponding Honour subject. A candidate who obtains Honours in any branch will be considered to have also passed in that branch. Should a candidate not have deserved Honours in any branch, the Examiners shall be authorised to declare that he has passed in that branch, if they consider that his attainments come up to the Pass Standard.

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10. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in alphabetical order together with a list of those who have obtained Honours in each branch, arranged in two divisions, both in order of merit. Each successful candidate shall receive with his degree of B.Sc. a certificate in the form entered in Appendix A.

MASTER OF ARTS.

(*To be in force until the Examination of* 1908.)

1. An examination for the degree of Master of Arts shall be held annually in Calcutta, commencing at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

Any candidate who has passed in the B.Sc. Examination may be examined for the degree of M.A. in one or more of the following branches :—

(1) Mathematics.
(2) Natural and Physical Science.

2. Any candidate who has passed the B.A. Examination may be examined for the degree of M.A. in one or more of the following branches :—

(1) Languages.
(2) History.
(3) Mental and Moral Philosophy.
(4) Mathematics.
(5) Natural and Physical Science.

3. A fee of fifty rupees shall be payable by each candidate. No candidate shall be admitted to the examination unless he shall have paid this fee to the Registrar. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to any one or more subsequent M.A. examinations on payment of a like fee of fifty rupees on each occasion. A candidate who fails to present himself may be admitted to any one subsequent M.A. Examination on payment of half the fee.

4. Every candidate shall send his application, with a certificate in the form entered in Appendix A, to the Registrar before such time as the Syndicate shall determine, the date to be notified in the Calendar for the year.

5. The Examination in languages shall be in English for candidates whose vernacular is not English, or in any one of the following classical languages, *viz.*: Greek, Latin Sanskrit, Arabic, Persian, Hebrew, and Pali.

The subjects in languages shall be selected by the Syndicate two years before the examination.

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The examination shall include written answers in English to questions relating to the books selected for the examination.

It shall also include questions on Comparative Grammar, with special reference to the language professed by the candidate.

Every candidate shall be required to write an essay in English on a subject connected with the History or Literature of the language professed by him.

The examination in English shall include the elements of Anglo-Saxon grammar, and one paper in English literature generally.

The examination in the classical language shall include translation into English from the language professed by the candidate, and into that language from English, A candidate for the degree of M.A. in Sanskrit shall be allowed to take up Indian palæography and epigraphy instead of any group which he may select of the text-books in philosophy fixed by the Syndicate. The Syndicate to determine what constitutes a group for the purpose of this regulation.

6. The examination in History* shall be in the following subjects :—

(*a*) The History of England (including Scotland, Ireland, and the British Colonies and dependencies) to the accession of Queen Victoria.
(*b*) The Constitutional History of England.
(*c*) A selected period of History—Indian or European, Ancient, Mediæval, or Modern—to be studied with reference to original sources.
(*d*) Political philosophy, General Jurisprudence, and International Law.
(*e*) Political Economy and Economic History.

Candidates shall also be required to write an Essay in English on some subject included in the foregoing course.

7. The examination in Mental and Moral Philosophy shall include Psychology, Logic, Ethics, and Natural Theology as in the B.A. Honour Examination, but more fully developed, together with Political Philosophy and the History of Indian and European Philosophy (both General and Special), the subjects in Political Philosophy and History of Philosophy (Special) to be selected from year to year.

8. Candidates in Mathematics shall be allowed to select alternatively one of the following groups of subjects :—

(A) Pure Mathematics as principal subject with Mixed Mathematics as subsidiary subject.

(B) Mixed Mathematics as principal subject with Pure Mathematics as subsidiary subject.

Candidates who select group (A) shall be examined in the following subjects :—

1. Algebra.
2. Trigonometry, Plane and Spherical.
3. Theory of Equations.
4. Analytical Plane Geometry.
5. Analytical Solid Geometry.

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* For Text-books, see Section VIII.

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6. Differential Calculus.
7. Integral Calculus, including the elements of the Calculus of Variations.
8. Differential Equations.
9. Analytical Statics.
10. Dynamics of a Particle.
11. Hydrostatics and Elementary Hydrokinetics.
12. Newton's Principia, Sections I, II, III.
13. Astronomy.

Candidates who select group (B) shall be examined in the following subjects :—

1. Analytical Plane Geometry.
2. Anlytical Solid Geometry.
3. Differential Calculus.
4. Integral Calculus, including the elements of the Calculus of Variations.
5. Analytical Statics.
6. Dynamics of a Particle.
7. Rigid Dynamics.
8. Hydro-mechanics, including the elements of the Theory of Sound.
9. Astronomy.
10. Newton's Principia, Sections I, II, III, IX, XI.

Candidates shall be required to possess a knowledge of so much of the Theory of Equations, Differential Equations, Spherical Trigonometry and Geometrical Optics as is necessary to understand the subjects in group (B).

9. Candidates in Natural and Physical Science shall be allowed to select alternatively one out of the following subjects :—

(A) Chemistry.
(B) Heat, Electricity, and Magnetism as principal subjects with Light and Sound as subsidiary subjects.
(C) Light and Sound as principal subjects, with Heat, Electricity, and Magnetism as subsidiary subjects.
(D) Botany.
(E) Physiology and Zoology.
(F) Geology and Mineralogy.

(A) The course in Chemistry shall be both theoretical and practical. In the practical examination candidates ought to show a good knowledge of chemical manipulation, and ought to be able to qualitatively analyse complex inorganic substances. They should also be acquainted with the Principles of quantitative analysis.*

(B) and (C) Candidates will have to show a thorough knowledge of the principal subjects and a general acquaintance with the subsidiary subjects, treating the subjects mathematically and experimentally.

(D) Botany* shall include the following :—
(*a*) General and Special Morphology and Physiology.
(*b*) Systematic Botany.
(*c*) Palæobotany.
(*d*) Practical knowledge of indigenous Indian plants and identification of specimens of them by Roxburgh's *Flora Indica* (Clarke's edition).

(E) Zoology* shall include the subjects (*a*) Comparative Anatomy and Physiology, (*b*) Distribution, and (*c*) Evolution.

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* For Text-books, see Section VIII.

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(F) Geology and Mineralogy* shall include the subjects of (*a*) Stratigraphical Geology, (*b*) Palæontology, (*c*) Mineralogy, (*d*) Crystallography, and (*e*) Elementary Inorganic Chemistry.

10. As soon as possible after each examination for the degree of M.A., the Syndicate shall publish a list of candidates who have passed, arranged in three classes, each in order of merit. Candidates shall be bracketed together, unless the Examiners are of opinion that there is clearly a difference in their merits. Each successful candidate shall receive with his degree of M.A. a certificate setting forth the subject in which he was examined, and the class in which he was placed. The names of those successful candidates who have not prosecuted a regular course of study in an affiliated Institution shall be submitted to the Senate every year before the Convocation, with a view to their being admitted to the degree of M.A.

11. The candidate who shall be placed first in the first class in each branch shall receive a Gold Medal and a prize of books to the value of one hundred rupees, and the second student of the first class in each branch shall receive a Silver Medal and a prize of books to the value of one hundred rupees.

12. Any Master of Arts may, on payment of a fee of fifty rupees, be admitted to the M.A. Examination in any branch other than that in which he was previously examined, and may, if his attainments come up to the standard prescribed for the degree of M.A., be granted a certificate to that effect, stating the class in which he has passed. A candidate who fails to pass, or to present himself for examination, shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to any one or more subsequent M.A. examinations on payment of a like fee of fifty rupees on each occasion. A candidate who fails to present himself may be admitted to any one subsequent M.A. Examination on payment of half the fee.

DOCTOR IN SCIENCE.

(*To be in force until the Examination of* 1907.)

1. An examination for the Degree of Doctor in Science shall be held annually in Calcutta, commencing at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

2. Every candidate for the Degree of Doctor in Science must produce certificates to the following effect :—

(*a*) Of having passed the B.Sc. Examination.

(*b*) Of having passed the M.A. Examination in Mathematics or Natural and Physical Science, under paragraph 2 of the M.A. Regulations,

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* For text-books, see Section VIII.

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at least two years previous to the date on which the D.Sc. Examination is to be held.

(*c*) Of having passed an Examination in one of the groups of subsidiary subjects defined below.

3. The subsidiary subjects referred to in paragraph 2 shall be as follows :—

(*a*) A short course in Mathematics.
(*b*) A course of Applied Mathematics in Heat, Electricity, and Magnetism.
(*c*) A course of Applied Mathematics in Light and Sound.
(*d*) A short general course in Chemistry.
(*e*) A course of Experimental Physics in Heat, Electricity, and Magnetism.
(*f*) A course of Experimental Physics in Light and Sound.
(*g*) A short general course in Zoology.
(*h*) A short general course in Botany.
(*i*) A short general course in Physiology.

4. A candidate who has passed the M.A. Examination in Natural and Physical Science, as defined in paragraph 9 of the M.A. Regulations, will be allowed to take up the subsidiary subjects in the following combinations :—

(*a*) [Chemistry] with either (*e*) or (*f*).
(*b*) & (*c*) [Physical Science] with either (*a*) or (*d*).
(*d*) [Botany] with (*g*).
(*e*) [Physiology and Zoology] with (*h*) or (*i*).
(*f*) [Geology and Mineralogy] with either (*d*), (*g*), or (*h*).

A candidate who has passed the M.A. Examination in Mathematics will be allowed to take up either (*b*) or (*c*).

5. The limits of the subjects referred to in paragraph 3 shall be as follows :—

(*a*) Candidates who take up this subject will be examined in (i) the Elements of the Differential and Integral Calculus, including the easier part of differential equations, (ii) Principles of Vector Analysis, and (iii) Principles of Dynamics. The examination will be limited to such parts of these subjects as are useful in the study of Mathematical Physics.

(*b*) & (*c*) In these subjects, candidates will not be expected to possess a higher knowledge of Mathematics than what is required of candidates in the corresponding subjects for the M.A. Examination.

(*d*) In addition to a fuller knowledge of the subjects included under the head " Bachelor of Science, " " Honours in Chemistry, " the following subjects will have to be specially studied :—

A.—Chemical Statics.

(i) Properties of matter in its three states of aggregation, their study from a chemical standpoint, including a knowledge of the Critical constants.

Theory of constitution of matter.

Atoms and Molecules ; dimensions of Molecules ; Types, atomic linking ; methods of determining Atomic and Molecular weights (with special attention to recent methods).

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Relations between properties of elements and their atomic weights; the Periodic Law.

Physical Mixtures; Compounds; Molecular Compounds; Capillarity; Surface-Tension of Viscosity of liquids.

Molecular refractive power and Atomic refractive equivalents.

Optically active Bodies, Saccharimetry; Stereo-chemical theories.

Connection between the Molecular strucuture of compounds and their Physical and chemical properties.

B.—Chemical Kinetics.

(ii) Theories as to the nature of chemical affinity and of chemical change. Specific coefficients of affinity, and methods of their determination.

Thermo-Chemistry.—A fairly complete study of Thermodynamical Laws applied to Chemical actions. Influence of Mass in Chemical action. Dissociation in gases and in solution; recent views as to nature of solutions.

Migration and velocity of Ions. Conductivity of electrolytes.

Volume.—Changes of solutions during chemical action. Diffusion. Dialysis. Electro-chemical theories.

Electrolysis, detailed study including—Chemical study of Batteries and storage cells.

Magneto-optic and electro-magnetic phenomena—chemically considered.

Influence of Light on Chemical action, Photo-Chemistry, Spectroscopy—detailed study.

(*e*) The course shall be the same as that for the corresponding subjects for the B.Sc. Honours Examination, with the addition of the elements of the Kinetic theory of gases, but candidates shall be required to show a more extended knowledge of the methods and principles of the above branches of Physical Science.

So far as the Mathematics of the B.Sc. Pass Standard are applicable, a knowledge of the mathematical treatment of the subjects will be expected, but only when such treatment is necessary for the proper elucidation of the principles involved, candidates must, however, show expertness in the solution of numerical examples arising from the application of Physical principles to practical problems.

The practical examination shall be confined to the standard exercises, which constitute the ordinary laboratory course in the above subjects, such as, for instance, are given in Glazebrook and Shaw's text-book on Practical Physics.

(*f*) The course shall be the same as that for the corresponding subjects for the B.Sc. Honours Examination, but candidates shall be required to show a more extended knowledge of the Methods and Principles of the above branches of Physical Science, especially with regard to Physical Optics and the theory of Wave Motion.

The remarks made under heading (*e*) with regard to mathematical treatment apply also here.

The Practical Examination shall be confined to the standard exercises, which constitute the ordinary laboratory course in the above subjects, such as, for instance, are given in Glazebrook and Shaw's text-book on Practical Physics.

(*g*) Two "General" papers will be set to the standard of Kirkaldy and Pollard's translation of Boas' Text-book of Zoology.

One of the papers will be on the general principles of Zoology, Phylogeny and Classification, Evolution, and distribution in space and time; the other will be on Animal Morphology, with a certain amount of Physiology and elementary Embryology.

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The " Practical " paper will be set to the standard of Parker's Zootomy.

The " Practical " questions should assume that the following objects and " types " have been examined or dissected :—

Skeleton of a (large) Mammal.
Ditto ditto Bird.
Ditto ditto Crocodile.
Frog (Systematic dissection).
Fish (ditto ditto).
Prawn and Crab (Systematic dissection of Prawn). Comparison of Crab with Prawn as regards modification of appendages.
Earthworm (dissection).
Freshwater Mussel (dissection).
Land-snail (dissection).
Freshwater Polyp (Microscope).
Bell-Animalcule (ditto).
Amœba.

(a) A knowledge of the Morphology of the flowering plants being assumed as already acquired, this course will embrace the morphology of the flowerless plants. Special attention should be given to the Anatomy and Physiology of both the flowering and flowerless plants. Systematic botany should occupy about one-third of the time devoted to the Course. Systematic studies should embrace the history of Botany briefly ; the various Systems of Classification ; the distribution and evolution of types in time and space ; the great alliances (or cohorts) of Natural Orders ; the more striking groups of Economic plants ; and, lastly, a detailed study of the diagnostic characters of selection of some 20 Natural Orders of flowering plants.

Candidates will be expected to show a more extended study of Cryptogamic Botany ; a practical knowledge of the use of the Microscope ; a detailed acquaintance with the distinctive features of 50 Natural orders including the Vascular Cryptogams ; and, lastly, an acquaintance with the commoner genera of five of the selected Natural Orders.

Books indicating the limits, of the several subjects will be recommended from time to time by the several Boards of Studies.

6. An examination in the subsidiary subjects referred to in paragraph 3 will be held annually in Calcutta at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year. A fee of thirty rupees shall be payable by each candidate. No candidate shall be admitted to the examination unless he shall have paid this fee to the Registrar. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate who fails to pass may be admitted to one or more subsequent examinations on payment of a like fee of thirty rupees on each occasion. Each successful candidate shall receive a certificate setting forth the subject in which he was examined.

7. A candidate who has passed the M.A. Examination in two of the subjects included under Mathematics and Natural and Physical Science of the M.A. Regulations, shall be exempted from passing the examination referred to in paragraph 2, clause (*c*).

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8. Every candidate for the degree of Doctor in Science may present himself for examination in some special branch of any one of the following subjects :—

(1) Mathematics.	(4) Botany.
(2) Chemistry.	(5) Zoology.
(3) Physics.	(6) Physiology.

(7) Geology and Mineralogy.

9. Application for permission to appear at this examination should be sent in not less than nine months before the examination, and should be accompanied by a statement of the special branch selected by the candidate. A fee of one hundred rupees shall be payable by each candidate; no application shall be received unless it is accompanied by this fee. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee.

10. As soon as possible after the last day for receiving applications, the Syndicate shall appoint a Board of Examiners for the ensuing examination.

11. The members of the Board of Examiners thus constituted shall meet at the earliest convenient date and determine whether the special branch selected by any candidate is of sufficient width to form the entire material of his written and practical examination, and, if not, they shall select some additional branches in which they consider it advisable that the candidate should be examined, it being distinctly understood that only such branches shall be added as are intimately connected with the subject-matter of the candidate's original selection

12. Should the candidate satisfy the Examiners that his attainments are of a sufficiently high order, he shall be required to submit, after a further period of not less than six months, an original thesis dealing with part of the special branch selected by him, and if this receive the approval of the Examiners, he shall be entitled to receive the degree of Doctor in Science.

13. Any candidate under paragraph 2, who has obtained a first class in each of the two Scientific subjects included under Mathematics and Natural and Physical Science of the M.A. Regulations, or who has obtained the Premchand Roychand Studentship in Scientific subjects, shall be exempted from the examination referred to in paragraph 11, but not from the production of the original thesis referred to in paragraph 12.

14. Every successful candidate shall receive a diploma in the form entered in Appendix A, setting forth the subject in which he was examined.

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REGULATIONS FOR THE EXAMINATION OF FEMALE CANDIDATES.

General.

1. Female candidates shall be examined in a separate place under the superintendence of ladies.
2. No female candidate shall be admitted to any examination without presenting a certificate in the form prescribed in Appendix A.
3. In all examinations, the fees paid by female candidates shall be the same as those paid by males.
4. No unsuccessful candidate shall be entitled to a refund of her fee.

Entrance Examination of Female Candidates.

(To be in force until the Examination of 1907.)

The Entrance Examination shall be the same for females as for males.

Female candidates shall be allowed to take up Khasi as a second language.

F.A. Examination of Female Candidates.

(To be in force until the Examination of 1908.)

1. Female candidates may be admitted to this examination without studying in an Affiliated Institution. No candidate, however, shall be allowed to present herself for this examination until two years have elapsed from the time of her passing the Entrance Examination.
2. Every female candidate shall be allowed to take up the subjects prescribed by the University of Calcutta for the F.A. Course, with the option of substituting German, Italian, or an Indian vernacular for the second language.
3. Female candidates shall also be allowed to substitute Botany for Physics and Chemistry.

B.A. Examination of Female Candidates.

(To be in force until the Examination of 1908.)

1. Female candidates may be admitted to this examination without studying in any Affiliated Institution. But no candidate shall be allowed to present herself for this examination until two years have elapsed from the time of her passing the F.A. Examination.

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2. Every female candidate shall be allowed to take the subjects prescribed by the University of Calcutta for the B.A. Course with the option of substituting French for the second language.

3. The names of those female candidates who may succeed in passing the B.A. Examination shall be submitted to the Senate every year before the Convocation, with a view to their being admitted to the degree of Bachelor of Arts.

M.A. Examination of Female Candidates.

The M.A. Examination shall be the same for females as for males.

(ii) LAW.

BACHELOR IN LAW.

(*To be in force until the Examination of* 1908.)

1. An Examination for the degree of Bachelor in Law shall be held annually in Calcutta, Rangoon, and such other places as the Syndicate may from time to time determine, and shall commence at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

2. Any Graduate of the University may be admitted to the Examination, provided that he has prosecuted a regular course of study in an institution affiliated in Law for not less than two academical years after passing the B.A. or B.Sc. Examination. No candidate shall be considered to have prosecuted a regular course of study unless he has attended at least 24 lectures* in each of the groups of subjects prescribed in paragraph 6, the minimum number of lectures to be delivered in each group being 36.

3. Every candidate for admission to the examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least thirty days before the date fixed for the commencement of the examination.

4. A fee of thirty rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of thirty rupees on each occasion.

* No candidate shall be allowed to count attendance at more than one lecture in the same day.

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5. The examination shall be written and may also be partly oral.

6. Every candidate shall be examined in the following subjects* :—

1. The Principles of Jurisprudence; the History and Constitution of the Courts of Law and legislative authorities in India.
2. The law relating to persons in their public and private capacities, including the Law of Testamentary Succession.
3. The Law of Property, including the Law relating to Land Tenures and the Revenue Laws.
4. The Law of Property, including the Laws of Transfer, Prescription and Pre-emption.
5. The Law of Contracts and Torts.
6. The Law of Crimes and Criminal Procedure.
7. The Law of Civil Procedure, including the Laws of Evidence and the Law of Limitation.
8. The Hindu Law and the Mahomedan Law (with the exception of parts already included), and the Law of Intestate Succession.

7. Eight papers shall be set at the Examination, one on each of the groups of subjects prescribed in the preceding paragraph.

8. As soon as possible after the examination, the Syndicate shall publish a list of the successful candidates arranged in two divisions, each in order of merit. The first student of the first class shall receive a Gold Medal, provided that he is considered by the Examiners to have evinced sufficient merit. The Syndicate shall be at liberty to award one or more special prizes if they deem it expedient.

DOCTOR IN LAW.

(To be in force until the Examination of 1907.)

1. No special examination shall be held, but any person who has graduated as Bachelor in Law, and has at any time passed the Honour Examination, may be admitted to the degree of Doctor in Law without examination, provided that—

(1) Two members of the Faculty of Law or two Doctors in Law shall testify, to the satisfaction of the Syndicate, that since graduating, he has practised his profession with repute for five years, and that in habits and character he is a fit and proper person for the degree of Doctor; and

(2) He shall produce an essay approved by the President of the Faculty of Law for the time being, on some subject connected with Law or Jurisprudence

2. A fee of one hundred rupees shall be payable for the degree of Doctor in Law. No candidate shall be admitted unless he shall have previously paid this fee to the Registrar.

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* For text-books, see Section VIII of Part II.

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(iii) MEDICINE.

LICENCE IN MEDICINE AND SURGERY.

1. An examination for a licence* in Medicine and Surgery shall be held in Calcutta, and shall commence at such times as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year. The examination shall consist of three parts, entitled respectively, the Preliminary Scientific, the First and the Second Licentiate Medical Examinations. The Preliminary Scientific and the First Licentiate Medical Examination shall be held annually; the Second Licentiate Medical Examination shall be held twice a year.

PRELIMINARY SCIENTIFIC L.M.S. EXAMINATION.

(To be in force until the Examination of 1907.)

2. Any undergraduate of the University who can produce certificates to the following effect may be admitted to the examination :—

(*a*) Of having passed the First Examination in Arts.

(*b*) Of having been engaged in Medical studies for two academical years after passing the First Examination in Arts.

(c) Of having attended the following course of lectures at a School of Medicine recognised by the Syndicate :—

Two Courses each of 70 *Lectures.*

Chemistry.

One Course of 20 *Lectures.*

Botany.

One Course

Practical Chemical exercises in testing the nature of ordinary poisons and in the examination of urine and urinary deposits.

3. Every candidate for admission to the examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least fourteen days before the date fixed for the commencement of the Examination.

4. A fee of ten rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent

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* The holder of this Licence shall be styled Licentiate in Medicine and Surgery.

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examinations on payment of a like fee of ten rupees on each occasion, provided he produces a certificate that he had, since the date of the last examination at which he presented himself, attended a regular course of instruction* in the subject or subjects in which he failed at that examination.

5. The examination shall be written, oral, and practical.

6. Every candidate shall be examined in the following subjects :—

(*a*) Chemistry, organic and inorganic, having special reference to practical medical science.

(*b*) Botany, so far as regards the Anatomy, Histology, and Physiology of flowering plants,

(*c*) Practical Chemistry, including the testing of the presence and nature of ordinary poisons, and the examination of urine and urinary deposits.

The Syndicate shall notify three months before the examination the portions of Botany† in which candidates shall be examined.

7. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

First Licentiate Medical Examination.

(*To be in force until the Examination of* 1909.)

8. Any Undergraduate of the University who can produce certificates to the following effect, may be admitted to this examination :—

(*a*) Of having passed the Preliminary Scientific L.M.S. Examination at least one academical year previously.‡

(*b*) Of having attended the following courses of lectures at a School of Medicine recognised by the Syndicate :—

Two Courses each of 70 *Lectures.*

Descriptive and Surgical Anatomy.
Materia Medica.
General Anatomy and Physiology.

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* A regular course of instruction means attendance at one complete course of lectures, or in the case of Practical Chemistry, Practical Chemical Exercises, as defined in paragraph 2.

† See Section VIII. Candidates will not be expected to recognise microscopical specimens at the examination.

‡ A student who has failed in the Preliminary Scientific Examination, but has obtained 15 per cent. of the marks in the aggregate, may be admitted to the Combined Preliminary Scientific and First Licentiate Examinations of the same year. The fee for the Combined Examination shall be Rs. 25.

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(*c*) Of having studied Practical Pharmacy for three months, and of having acquired a practical knowledge of the preparation and compounding of medicines.

(*d*) Of having dissected during three winter terms, and of having completed at least twelve dissections in each term.

9. Every candidate for admission to the Examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least fourteen days before the date fixed for the commencement of the examination.

10. A fee of fifteen rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations, on payment of a like fee of fifteen rupees on each occasion, provided he produces a certificate that he has, since the date of the last examination at which he presented himself, attended a regular course of instruction* in the subject or subjects in which he failed at that examination.

11. The examination shall be written, oral and practical.

12. Every candidate shall be examined in the following subjects :—

(*a*) Descriptive and Surgical Anatomy.

(*b*) Materia Medica and Pharmacy as for as regards drugs contained in the British Pharmacopœia.

(*c*) General Anatomy and Physiology.

13. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

14. Any passed student of any Vernacular School of Medicine, if recommended by the Principal of an Affiliated Medical College for distinguished merit, may be admitted to the Combined Preliminary Scientific L.M.S. and First L.M.S. Examination, on producing certificates to the following effect :—

(*a*) Of having passed the First Examination in Arts of the University.

(*b*) Of having passed the Final Examination of the Vernacular School of Medicine with marked distinction.

(*c*) Of having, subsequently to qualifying in the Vernacular classes, been engaged for one year in the study of Medicine and Surgery, and during that time of having attended in a School of Medicine recognised by the Syndicate, a course of lectures in each of the following subjects :—

Botany.	Anatomy.
Chemistry.	Physiology.

The fee for the Combined Examination shall be Rs. 25.

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* A regular course of instruction means attendance at one complete course of lectures, as defined in paragraph 8.

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15. A female student who, after passing the Entrance Examination, has attended classes and obtained her certificate in Medicine, Surgery, and Midwifery in the Calcutta Medical College, shall, if recommended by the Principal, be admitted to the Combined Preliminary Scientific L.M.S. and First L.M.S. Examination on her producing certificates to the following effect :—

(*a*) Of having passed the First Arts Examination of the University.

(*b*) Of having attended in a School of Medicine recognised by the Syndicate an additional course of lectures in each of the following subjects :—

Botany.	Anatomy.
Chemistry.	Physiology.

The fee for the Combined Examination shall be Rs. 25.

Second Licentiate Medical Examination.

(*To be in force until the Examination of* 1911.)

16. Any candidate who can produce certificates to the following effect may be admitted to this examination :—

(*a*) Of having passed the First Licentiate Medical Examination or First M.B. Examination at least two academical years previously.

(*b*) Of having subsequently to passing the First Licentiate Medical Examination, or First M.B. Examination, attended the following courses of lectures at a School of Medicine recognised by the Syndicate :—

Two Courses of 70 *Lectures.*

Medicine (including Hygiene).
Surgery.
Midwifery.

One Course of 40 *Lectures.*

General Pathology and Morbid Anatomy.

Two Courses of 50 *Lectures.*

Medical Jurisprudence.

One Course of 25 *Lectures.*

Diseases of the Eye.

(*c*) Of having, subsequently to passing the First Licentiate Medical Examination, or First M.B. Examination, dissected the surgical regions and performed surgical operations during two winter sessions ; the certificate to state the number and nature of the operations so performed.

(*d*) Of having duly and carefully performed six *post-mortem* examinations and having regularly attended one course of practical demonstration in the Dead House.

(*e*) Of having conducted at least six Labours.

Certificates on this subject will be received from any legally-qualified practitioner in medicine.

(*f*) Of having attended Hospital and Dispensary Practice during the last three academical years of study in the following manner, *viz.* :—

Three months of attendance at the Out-door Dispensary of a recognised Hospital.

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Fifteen months of attendance at the Surgical practice of a recognised Hospital, and Lectures on Clinical Surgery during such attendance.

Fifteen months of attendance at the Medical practice of a recognised Hospital, and Lectures on Clinical Medicine during such attendance.

Three months of attendance at the practice of an Eye Infirmary.

(*g*) Of having drawn up, in his own handwriting, six Medical and six Surgical cases, during his period of service as clinical clerk or dresser.

(*h*) Of general character and conduct from the Principal of the College or School of Medicine, at which he has studied.

17. Every candidate for admission to the examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least fourteen days before the date fixed for the commencement of the examination.

18. A fee of twenty-five rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of twenty-five rupees on each occasion, provided he produces a certificate that he has, since the date of the last examination at which he presented himself, attended a regular course of instruction* in the subject or subjects in which he failed at the examination.

19. A candidate who fails at the Second L.M.S. Examination shall be re-examined only in the subject or subjects in which he has failed, provided he presents himself for re-examination within one year from the date of the examination at which he failed. If he fails to present himself for re-examination within one year, he shall be re-examined in all the prescribed subjects.

20. A candidate who fails in more than two of the four subjects, Medicine, Surgery, Midwifery, and Pathology, or in two of these subjects and in Medical Jurisprudence and Hygiene, shall not be admitted to the Examination next following that at which he failed.

21. The examination shall be written, oral and practical.

22. Every candidate shall be examined in the following subjects :—

(*a*) Principles and Practice of Medicine.
(*b*) Ditto Ditto Surgery.
(*c*) Ophthalmic Medicine and Surgery.
(*d*) Midwifery with the exception of the subjects of conception, generation, and the physiology of the fœtus.

* A regular course of instruction in Medicine or Surgery means, six months' attendance at a recognised Hospital : in Midwifery, six months' attendance at an Obstetric Hospital, and presence at six labours ; in Pathology, attendance at six *post-mortem* pathological demonstrations by a Professor of Pathology ; in Medical Jurisprudence, attendance at six medico-legal *post-mortems* by a Professor of Medical Jurisprudence, or by a Civil Surgeon.

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(*e*) Medical Jurisprudence with the exception of the subjects of birth, inheritance, legitimacy, paternity, hermaphroditism, impotence, insanity, and life insurance.

(*f*) Hygiene and General Pathology..

The identification of microscopic preparations shall form no part of any of the questions in the foregoing subjects. The subject of poisons in the examination in Medical Jurisprudence shall be limited to poisons commonly used in India; and in the subject of Pathology no question in special Pathology shall be asked.

The Clinical Examination shall be conducted in the wards of a Hospital.

23. Every candidate shall be required—

To examine, diagnose, and treat cases of acute or chronic diseases to be selected by the Examiners, and to draw up careful histories of the cases; also, if required, to perform and report in detail microscopical examination of any of the selected cases that may have died in hospital.

To apply apparatus for great surgical injuries and explain the objects to be attained by them, as well as the best manner of effecting those objects.

To perform capital operations upon the dead subject, after detailing to the Examiners the pathological conditions in which such operations are necessary, the different modes of operation adopted, and the reasons for preferring any particular modes of procedure.

24. As soon as possible after the examination, the Syndicate shall publish a list of the successful candidates, arranged in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

BACHELOR IN MEDICINE.

1. An examination for the degree of Bachelor in Medicine shall be held annually in Calcutta, and shall commence at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year. The Examination shall consist of three parts, entitled respectively, the Preliminary Scientific, the First and Second M.B. Examinations.

Preliminary Scientific M.B. Examination.

(*To be in force until the Examination of* 1908.)

2. Any undergraduate of the University who can produce certificates to the following effect may be admitted to this Examination :—

(*a*) Of having passed the First Examination in Arts; *Latin having been one of the languages in which he was examined.**

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* The words here printed in italics are to take effect as soon as the Syndicate may order.

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(*b*) Of having been engaged in medical studies for two academical years after passing the First Examination in Arts.

(*c*) Of having attended the following courses of lectures at a School of Medicine recognised by the Syndicate :—

Two Courses each of 70 *Lectures.*

Chemistry.

Two Courses each of 20 *Lectures.*

Botany.

One Course of 40 *Lectures.*

Comparative Anatomy, Comparative Physiology and Zoology.

One Course.

Practical Chemical exercises in testing the nature of ordinary poisons and in the examination of animal secretions and urinary deposits.

3 Every candidate for admission to the examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least fourteen days before the date fixed for the commencement of the examination.

4. A fee of ten rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of ten rupees on each occasion, provided he produces a certificate that he has since the date of the last Examination at which he presented himself, attended a regular course of instruction* in the subject or subjects in which he failed at that Examination.

5. The examination shall be written, oral and practical.

6. Every candidate shall be examined in the following subjects :—

Elementary Chemical Physics, including the general laws of Light, Heat, Electricity, and Magnetism ; also Chemistry, organic and inorganic, having special reference to practical medical science.

Botany.

Comparative Anatomy, Comparative Physiology and Zoology.

Practical Chemistry, including the testing of the presence and nature of ordinary poisons and the examination of animal secretions and urinary deposits.

The Syndicate shall notify three months before the examination the portions of Botany† in which candidates shall be examined.

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* A regular course of instruction means attendance at one complete course of lectures, or in the case of Practical Chemistry, of Practical Chemical Exercises, as defined in paragraph 2.

† See Section VIII of Calendar, Pt. II. Candidates will not be expected to recognise microscopical specimens at the examination.

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7. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in two divisions, the first in order of merit, and the second in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

First M.B. Examination.

(To be in force until the Examination of 1909.)

8. Any undergraduate of the University who can produce certificates to the following effect may be admitted to the examination :—

(*a*) Of having passed the Preliminary Scientific M.B. Examination at least one academical year previously.*

(*b*) Of having attended the following courses of lectures at a School of Medicine recognised by the Syndicate :—

Two Courses each of 70 *Lectures.*

Descriptive and Surgical Anatomy.
Materia Medica.
General Anatomy and Physiology.

(*c*) Of having studied Practical Pharmacy for three months ; and of having acquired a practical knowledge of the preparation and compounding of medicines.

(*d*) Of having dissected during three winter terms, and having completed at least twelve dissections in each term.

9. Every candidate for admission to the examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least fourteen days before the date fixed for the commencement of the examination.

10. A fee of fifteen rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of fifteen rupees on each occasion, provided he produces a certificate that he has, since the date of the last examination at which he presented himself, attended a regular course of instruction† in the subject or subject in which he failed at that examination.

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* A student who has failed in the Preliminary Scientific Examination but has obtained 15 per cent. of the marks in the aggregate, may be admitted to the Combined Preliminary Scientific and First M.B. Examination of the same year. The fee for the Combined Examination shall be Rs. 25.

† A regular course of instruction means attendance at one complete course of lectures, as defined in paragraph 8.

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11. The examination shall be written, oral, and practical. Every candidate shall be examined in the following subjects :—

Descriptive and Surgical Anatomy.
Materia Medica and Pharmacy.
General Anatomy and Physiology.

12. As soon as possible after the examination, the Syndicate shall publish a list of the candidates who have passed, arranged in two divisions, the first in order of merit and the second in alphabetical order. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

Second M.B. Examination.

(To be in force until the Examination of 1912.)

13. Any candidate who can produce certificates to the following effect, may be admitted to this examination :—

(*a*) Of having passed the First M.B. Examination at least two academical years previously.

(*b*) Of having, subsequently to passing the First M.B. Examination attended the following courses of lectures at a School of Medicine recognised by the University :—

Two Courses each of 70 *Lectures.*

Medicine (including Hygiene).
Surgery.
Midwifery.

One Course of 40 *Lectures.*

General Pathology and Morbid Anatomy.

Two Courses of 50 *Lectures.*

Medical Jurisprudence.

One Course of 25 *Lectures.*

Diseases of the Eye.

(*c*) Of having, subsequent to passing the First M.B. Examination dissected the surgical regions, and performed surgical operations during two winter sessions ; the certificate to state the number and nature of the operations so performed.

(*d*) Of having duly and carefully performed six *post-mortem* examinations, and of having regularly attended one course of practical demonstration in the Dead House.

(*e*) Of having conducted at least six Labours.

Certificates on this subject will be received from any legally-qualified practitioner in Medicine.

(*f*) Of having attended Hospital and Dispensary Practice during the last three academic years of study in the following manner, *viz* :—

Three months of attendance at the Outdoor Dispensary of a recognised Hospital.

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Fifteen months of attendance at the Surgical Practice of a recognised Hospital, and Lectures on Clinical Surgery during such attendance.

Fifteen months of attendance at the Medical Practice of a recognised Hospital and Lectures on Clinical Medicine during such attendance.

Three months of attendance at the Practice of an Eye-Infirmary.

(*g*) Of having drawn up, in his own handwriting, six Medical and six Surgical cases during his period of services as clinical clerk or dresser.

(*h*) Of general character and conduct from the principal of the college or School of Medicine at which he has studied.

14. Every candidate for admission to the examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least fourteen days before the date fixed for the commencement of the examination.

15. A fee of thirty rupees shall be payable by each candidate. No candidate shall be admitted unless he shall have paid this fee to the Registrar. A candidate who fails to pass or present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of thirty rupees on each occasion, provided he produces a certificate that he has, since the date of the last examination at which he presented himself, attended a regular course of instruction* in the subject or subjects in which he failed at that examination.

16. A candidate who fails at the Second M.B. Examination shall be admitted to the next half-yearly re-examination of the unsuccessful Second L.M.S. candidates, and shall be re-examined in those subjects only in which he has been rejected at the Second M.B. Examination, provided that he has not failed in more than two of the four subjects, Medicine, Surgery, Midwifery, and Pathology, or in two of these subjects and in Medical Jurisprudence and Hygiene.

17. A candidate who has failed at the Second L.M.S. Examination shall not be admitted to the Second M.B. Examination till six months have expired from the date of such failure.

18. The examination shall be written, oral, and practical.

19. Every candidate shall be examined in the following subjects :—

Principles and Practice of Medicine.	Midwifery.
Ditto ditto of Surgery.	Medical Jurisprudence.
Ophthalmic Medicine and Surgery.	Hygiene and Pathology.

The Clinical Examination shall be conducted in the wards of a Hospital.

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* A regular course of instruction in Medicine or Surgery means six months' attendance at a recognised hospital : in Midwifery, six months' attendance at an obstetric hospital and presence at six Labours ; in other subjects, attendance at one course of lectures, as defined in paragraph 13.

A candidate who has obtained the Licence in Medicine and Surgery, and who has been attached to a hospital or dispensary for six months since the

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20. Every candidate shall be required—

To examine, diagnose, and treat cases of acute or chronic diseases to be selected by the Examiners; and to draw up careful histories of the cases; also, if required, to perform and report in detail microscopical examinations on any of the selected cases that may have died in Hospital.

To apply apparatus for great surgical injuries, and explain the objects to be attained by them, as well as the manner of effecting those objects.

To examine, in presence of the Examiners, morbid products chemically, and by the aid of the microscope demonstrating the results obtained.

To perform capital operations upon the dead subjects after detailing to the Examiners the pathological conditions in which such operations are necessary, the different modes of operation adopted, and the reasons for preferring any particular mode of procedure.

21. As soon as possible after the examination, the Syndicate shall publish a list of the successful candidates, arranged in two divisions, the first in order of merit, and the second in alphabetical order. The candidate who shall be placed first in the first division shall receive a gold medal of the value of one hundred rupees.

22. A candidate who appears at any of the examinations for the degree of Bachelor in Medicine, and fails to reach the prescribed standard at that examination, shall, if he has attained the standard required at the corresponding examination for a Licence in Medicine and Surgery, be entitled to a certificate of having passed that corresponding examination.

23. Any Licentiate of two years' standing whose diploma dates before the 1st January, 1887, may be admitted to this degree, on paying a fee of fifty rupees, and producing certificates to the following effect:—

(*a*) Of having passed the First Examination in Arts,* *Latin having been one of the languages in which he was examined.*†

(*b*) Of having attended at a School of Medicine recognised by the Syndicate, a course of lectures in Comparative Anatomy and Zoology consisting of at least 40 lectures.

(*c*) Of having passed an examination in Comparative Anatomy and Zoology and in General and Comparative Physiology.

24. Any candidate who has passed the Licentiate Examination before 1867, or the Senior Diploma Examination of the Medical College, may be admitted to this degree, without further Examination or fee, on producing a certificate of having passed

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date of his last appearance at the Second M.B. Examination, will be held to have attended a regular course of instruction.

* Any Licentiate in Medicine and Surgery may proceed to the First Examination in Arts or to the B.A. Examination, without completing the two years' attendance at an affiliated Institution required under paragraph 2 of the First Arts and B.A. Regulations.

† The words here printed in italics are to take effect as soon after 1869 as the Syndicate may order.

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the First Examination in Arts,* *Latin having been one of the languages in which he was examined.*†

(iv) ENGINEERING.

FIRST EXAMINATION IN ENGINEERING.

(To be in force until the Examination of 1909.)

1. The First Examination in Engineering shall be held every year in Calcutta, and shall commence at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

2. Any undergraduate of the University may be admitted to this examination, provided he has prosecuted a regular course of study in a School of Engineering affiliated to the University, for five years after passing the Entrance Examination, or for three years after passing the F.A. Examination.

3. Every candidate for admission to the examination shall send his application with a certificate, in the form entered in Appendix A, to the Registrar, at least fourteen days before the date fixed for the commencement of the examination.

4. A fee of twenty rupees shall be payable by each candidate. No candidate shall be admitted unless he has paid this fee to the Registrar. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of twenty rupees on each occasion.

5. Every candidate shall be examined in the following subjects :—

I. Mathematics,
II. Natural Science.
III. Engineering construction.
IV. Geodesy.
V. Drawing.

I.—MATHEMATICS.

FIRST PAPER.

Computations and Mensuration.

(*a*) Practical applications of Arithmetic with special reference to contracted methods.

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* Any Licentiate in Medicine and Surgery may proceed to the First Examination in Arts or to the B.A. Examination, without completing the two years' attendance at an affiliated institution required under paragraph 2 of the First Arts and B.A. Regulations.

† The words here printed in italics are to take effect as soon after 1869 as the Syndicate may order.

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The theory of logarithms: application of logarithms to arithmetical and trigonometrical calculations, including the solution of triangles and the determination of heights and distances.

(*b*) Mensuration of plane and solid figures, including the application of Simpson's rules, the prismoidal formula and Guldin's theorems, and not excluding proofs of the formulæ in use.

N.B.—Books of logarithmic tables will be provided for the use of candidates during the examination.

Second Paper.

Algebra, Trigonometry and Plane Analytical Geometry.

(*a*) Summation of arithmetic and geometric series, and of series in which the n-th term is an integral function of n.

Binomial, exponential and logarithmic series with easy examples.

Partial Fractions.

(*b*) Geometrical representation of complex quantities: addition and multiplication of complex quantities; De Moivre's theorem; derived trigonometrical formulæ, including the ordinary formulæ of Elementary Trigonometry.

The expansions and exponential values of $\cos\theta$ and $\sin\theta$; the hyperbolic functions.

Summation of a series of sines and cosines of angles in arithmetical progression, and of other simple trigonometrical series.

(*c*) Rectangular Cartesian co-ordinates and polar co-ordinates; the analytical geometry of the straight line; equations representing two or more straight lines.

The special forms of the equations of the circle, parabola, ellipse and hyperbola without reference to the general equations of the second degree.

Determination of the asymptotes of a conic given by any equation of the second degree; their use in discriminating the character of the curve.

N.B.—The methods of pure Geometry and of the Differential Calculus will not be disallowed.

Third Paper.

Statics and Dynamics.

(*a*) Uniform and uniformly accelerated motion. Composition of velocities and accelerations. Relative velocities and accelerations. Projectiles. The laws of motion with simple illustrations such as the motion of a particle on an inclined plane, motion of two particles connected by a string, uniform circular motion of a particle.

(*b*) Composition of concurrent and parallel forces acting on a rigid body. Centre of parallel forces; centre of mass. Reduction of any system of coplanar forces acting on a rigid body to a single resultant force or couple; properties of resultant; conditions of equilibrium; statically equivalent system of forces; problems on equilibrium. Friction. Machines.

(*c*) Impulse of a force: principle of linear momentum for a single particle and for a system of particles; simple cases of impact, including the impact of two spheres whose centres move in the same plane.

Work of a force; principle of energy for a single particle and for a system of particles; application of the principle to the solution of problems.

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Fourth Paper.

Differential and Integral Calculus.

(*a*) Differentiation in general, including Leibnitz's theorem. Partial differentiation, and Differentiation of implicit functions.

Orders of smallness; infinitesimals and differentials. Elementary proofs of Taylor's and Maclaurin's Theorems. Expansions of functions of a single variable.

Evaluation of undetermined forms.

Tangents and normals of curves.

Maximum and minimum values of a function of one independent variable.

(*b*) Integration regarded as a process of a summation, and as the inverse of differentiation. The standard integrals. Integration by substitution and by parts.

Integration of rational functions. Simple integrals involving trigonometrical functions.

Application of the Integral Calculus to the determination of lengths of curves, areas, volumes; centres of mass and moments of inertia.

N.B.—Special importance will be attached to the performance and the applications of quite simple differentiations and integrations.

II.—NATURAL SCIENCE.

Chemistry.

I.—General properties and changes of matter in simple common cases. Relation of chemical changes to physical and mechanical changes.

Experimental proofs of the indestructibility of matter.

Elementary forms of matter; compounds and distinction of compounds from mixtures.

Experimental deduction of the principal fundamental laws of Chemistry; equivalents.

Dalton's atomic theory.

Experimental determination of the properties of gases with regard to heat and pressure; Boyle's and Charles' laws.

Experimental determination of the volume relations of reacting gases; law of gaseous volumes.

Deduction from above laws of the probable physical composition of matter; Avogadro's hypothesis.

Distinction between the molecule and molecular weight.

Density, relative density, vapour density, and specific gravity of substances.

Relation between relative density of gases and molecular weights.

Determination of relative density of gases by direct weighing and of vapour density of volatile substances by Dumas' method; deduction of molecular weights.

Relation between atoms and molecules.

Distinction between atoms and atomic weights.

Deduction of the maximum value of atomic weights of elements from the molecular weights of their volatile compounds.

Relation between atomic weights and equivalents; valency.

Dulong and Petit's law of atomic heats; its use as subsidiary method of determining atomic weights.

Chemical symbols and formulæ; representation of chemical changes by equations. Quantitative meaning of symbols; calculations.

General types of chemical action as illustrated by the experimental work previously done.

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II.—Occurrence, preparation, and properties of the elements listed below, and of their simpler compounds:—Hydrogen, Chlorine, Bromine, Iodine, Fluorine, Potassium, Sodium, Ammonium, Copper, Silver, Gold, Calcium, Strontium, Barium, Magnesium, Zinc, Mercury, Boron, Aluminium, Carbon, Titanium, Silicon, Tin, Lead, Nitrogen, Phosphorus, Arsenic, Antimony, Bismuth, Oxygen, Chromium, Manganese, Tungsten, Sulphur, Iron, Nickel, Cobalt, Platinum—considered generally.

A more detailed study of the preparation, properties and determination of the composition of the typical compounds—Hydrogen, Chloride, Water, Ammonia, and Methane.

Salts, bases, acids, and other compounds; their nature, behaviour on solution and relationship with each other.

General methods for the preparation of Haloides, Oxides, Hydroxide Sulphides, Sulphates, Nitrates, Phosphates, Carbonates, Carbides, Nitrites, and Hydrides.

The Peroxides and their relation to Ozone and Hydrogen Peroxide.

Double salts, crystallization, water of crystallization.

Isomorphism and its use in controlling atomic weights.

Systematization of Chemical data; the Periodic law, its uses and consequences.

III.—The Phenomena of combustion, explosions, reversible reaction; dissociation Phenomena.

Thermo-chemical methods of investigation.

Calorimetry—Heat of combustion, heat of formation, heat of neutralisation, heat of solution.

Exothermal and endothermal reactions.

Allotropy and the Allotropic modifications of the elements, allotropy of metals.

Application of the principles of thermo-chemistry to the solution of technical problems.

The Ionic theory of solution; deduction of the laws of dilute solutions from thermo-dynamical data; derived methods of determining molecular weights; explanations of chemical reactions based on the Ionic theory, and foundations of Analytical Chemistry.

IV.—Chemical Technology.

Natural waters: their composition, analysis, and determination of suitability for various purposes. Purification of waters on the large scale.

Preparation on the large scale of (Chemistry of the)—

(1) Chlorine, hydrochloric acid, bleaching powder.
(2) Oxygen, red lead.
(3) Quick-lime.
(4) Hydraulic lime, Portland cement, glass, soluble glass, porcelain, pottery, bricks.
(5) Plaster of Paris, alums.
(6) Sulphuric acid, sodium carbonate, caustic soda.
(7) White lead, permanent white.
(8) Tin plate, galvanized iron.
(9) The setting and hardening of Mortars and Cements.

V.—Practical Chemistry.

Preparation and demonstration of the properties of the common gases, such as Hydrogen, Oxygen, Nitrogen, Carbon Dioxide, Nitric Oxide, Nitrogen Monoxide, Hydrogen Sulphide, Hydrogen Chloride, Ammonia.

Preparation of the commoner acids, bases, oxides and salts, *e.g.*, Nitric Acid, Calcium Oxide, Calcium Hydrate, Copper Oxide, Ferrous Sulphate, Copper Sulphate, Zinc Sulphate, Sodium Chloride, Ammonium Chloride.

Determination of the relative density and molecular weight of soluble gases.

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Determination of approximate equivalent of metallic radicles in the most simple cases, *e.g.*, Copper, Lead, Iron.

Detection of the commoner substances by their physical characteristics.

Qualitative analysis (including blow-pipe analysis) of mixtures containing not more than two acid and two basic constituents (excluding phosphates insoluble in water) from the following list:—

Hydrogen, Potassium, Sodium, Ammonium, Magnesium, Calcium, Strontium, Barium, Zinc, Manganese, Iron, Aluminium, Chromium, Arsenic, Antimony, Tin, Mercury, Lead, Copper, Silver, Carbon, Sulphur, Hydrochloric Acid, Hydrofluoric Acid, Nitrous Acid, Nitric Acid, Carbonic Acid, Silica, Silicic Acid, Sulphuric Acid, Phosphoric Acid.

Qualitative analysis of substances, such as Iron, Brass, Bronze, Solders, Iron Ores, Boiler Scale, Lime-stones, Lime, Cement, Clay, Brick, Paints and Colour washes (for commoner inorganic constituents only).

Simple gravimetric estimations of Calcium, Zinc, Iron, Copper, Silver, Hydrochloric Acid, Carbolic Acid, Sulphuric Acid, and Silica, Commercial analysis of Lime, Lime-stones and Brass.

Physics.

(i) *Heat.*

Expansion of solids, liquids, and gases. Regnault's experiments on the absolute expansion of Mercury and the expansion of gases. Charles' law. Principles of Thermometers. Temperature as measured by the expansion of solids, liquids, and gases. Mercurial thermometers; air thermometers. Thermometers for various purposes. Density of solids, liquids and gases. Absolute temperature. Calorimetry. Correction for radiation. Specific heats of solids and liquids: method of Mixture; Bunsen's Ice Calorimeter. Specific heat of gases—at constant pressure, Regnault; at constant volume, Röntgen. Dulong and Petit's law. Changes of state of aggregation. Regulation. Critical temperature; continuity of state. Measurement of heat of fusion and vaporization. Influence of pressure on melting and boiling points. Methods of liquifying gases. Maximum pressure of vapours, Regnault; pressure of saturated steam below and above 100°0. Vapour densities; Dumas', Hoffman's *vs.* Meyer's methods. Hygrometry. Conduction; variable and permanent stages; simple cases of steady flow across a plate and along a bar; Wiedemann and Franz' experiments. Convection. First law of thermo-dynamics. Joule's experiments. Van der Wahl's Theory. Adiabatic transformations. Second law of thermo-dynamics. Cooling of gases by expansion.

(ii) *Statical Electricity.*

Electrification by friction. Electroscopes. Ice-pail experiments. Induction. Electrophorus. Voss and Wimhurst's Influence machine. Electric work and energy. Indicator diagram of electric work. Exploration of electric field. Potential at any point of the field. Lines and cubes of force. Equipotential surfaces; lines of induction. Measurement of electricity. Attracted disc electrometer; quadrant electrometer. Dimensions. Electrostatic units. Capacity, Condensers; two concentric spheres; Leyden Jar. Specific inductive capacity. Absolute measurement of capacity; statical comparison of capacities; measurement of specific inductive capacity; standard air condenser.

(iii) *Current Electricity.*

Chemical and thermal methods of producing currents: Daniell, Grove, Bunsen, Leclanche, Lahande; thermopile; thermo-electric battery.

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Electrolytic conduction. Electrolysis of fused compounds and of saline solutions. Faraday's laws. The voltameter. Metallic conduction.

Ohm's law. Kirchhoff's laws, Units of resistance. Resistance coils. Wheatstone's bridge. Resistance of battery. Resistance of galvanometer. Electromotive force. Standard cells—Latimer Clerk. Determination of electromotive force; Statical method. Poggendorff's condensation method. Relation of electricity to heat; Joule's law. Gaseous conduction. Disruptive discharge. Flow of electricity and flow of electrical energy. Phenomena attendant on the starting, stopping, and varying of a current. Oscillating discharges.

(iv) *Magnetism.*

Fundamental experiments. Magnetic field. Magnetic elements, Declination theodolite; dip circle; magnetometer. Methods of magnetization.

Relation of magnetism to electricity. Oersted's experiment. Tangent galvanometer; Thomson's reflecting galvanometer: Wiedemann's two-coiled galvanometer. Electro-dynamic experiments; the Solenoid. Electro-magnets; types. Permeability and methods of measuring it. Magnetic hysteresis. Magnetic flux, Magneto-motive force, reluctance. The law of traction. Induction of currents; Lenz's law. Self-induction. Ruhmkorff's coil. Electro-magnetic units.

(v) *Radiant Energy.*

Laws of vibrating particle. Harmonic vibrations. Transverse and longitudinal waves. Interference of waves travelling in the same and in opposite directions. Stationary waves. Composition of undulations; elliptical, circular, and rectilinear vibrations. Huyghen's principle. Reflection and refraction of thermal, luminous, and electric waves. Velocity of propagation; Foucault and Fizeau's experiments, Plane and spherical mirrors. Refraction. Prisms, minimum deviation. Determination of refractive indices of solids and liquids. Lenses; cardinal points; systems of lenses. Melloni's experiments on radiant heat. Hertz's experiments on electrical radiations. Röntgen rays. Wireless telegraphy. Dispersion. Spectroscope and spectra. Absorption of ethereal waves: diathermancy and athermancy; coloured bodies. Structure of the human eye.

APPLIED PHYSICS.

1. *Heat.*—Electric pyrometers. Outlines of construction of the double-acting steam-engine, Otto's gas-engine, petroleum engines, and modern ice-making machinery.

2. *Light.*—The sextant; photometry; telescopes; modern field glasses; microscopes. Principles of photography.

3. *Electricity and Magnetism.*—Telegraphy, Batteries in Common use; signals; sounder; Siemens' inkwriter; Siemens' relay. Lightning-conductors. Terminals, single and multiple points; earth connection, its importance; the conductor proper; material; form; joints; clips and brackets; ridge circuits; incidental connections; space protected; protection of dwelling-houses, magazines, chimneys, periodical inspection and testing. The telephone and microphone; electric bells and indicators. Dynamo-electrical machinery. Efficiency, causes of loss of energy. Types of armatures. Armature coils and cores. Field-magnets. Pole-pieces, Field-magnet coils. Commutators, Collectors, Brushes, Brush-holders. Curves of potentials and induction. Reaction of armature and field. Lead of brushes. Methods of exciting field magnets. Classification of dynamos. Examples.

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Transmission of electric energy. Accumulators. Transformers, Airlines, insulators, testing; modes of attaching the wire, material for wires, joints, lightning-protectors. Underground conduits. Three-wire system. Comparison with other methods of transmitting energy.

Motors: constructions and application. Electric lighting. Incandescent lamps; arc lamps. Electric welding. Electric measurements and measuring apparatus. The volt. Amperemeters and voltmeters; construction and calibration. Ampere balances. The balistic galvanometer. The Ohm; resistance coils; the shunts box; Ohmmeters. The Farad and micro-farad. The Watt.

Practical Exercises.

Measurement of the thickness of plates by the wire-gauge, micrometer, micrometer calliper, cover-glass tester, spherometer.

Determination of the radius of curvature of lenses by the spherometer.

The cathetometer; constructional details; adjustments; measurement of differences in heights; verification of Boyle's law; coefficient of tentional elasticity.

The longitudinal dividing machine: construction; manipulation, its use as a comparator; calibration of thermometer tubes.

The circular dividing machine; construction; manipulation.

The balance; adjustment; weighing by the method of vibration; comparison and calibration of weights; specific gravity of solids; cross-section of wires.

Moments of inertia.

The barometer: readings and corrections.

Thermometer: comparison; verification of fixed points. Coefficients of expansion.

Hygrometry: absorption hygrometer; dewpoint hygrometers; the psychrometer; comparison of results.

Calorimetry: correction for loss of heat; specific heat of solids; heat of evaporation; heat of combustion.

Melting and boiling points; distillation.

Study of magnetic fields.

Faraday's Ice-pail experiments; exercises with quadrant electrometer.

Setting up and reading of galvanometers. Ohm's law; Wheatstone's bridge.

The meter bridge: insulation resistance by deflection method; resistance of wires by Kelvin's apparatus.

The potentiometer; current and voltage measurements.

Kelvin's balance; current; voltage; wattage.

The balistic galvanometer; determination of constant dip and intensity of earth's magnetic field by the earth inductor.

Electrolysis; electrolytic current measurements.

Secondary batteries; constructional details and management.

Thermo-electrical experiments.

Exercises at the spectroscope. Photometric experiments. Focal distances of mirrors and lenses.

III.—ENGINEERING CONSTRUCTION.

Materials.—Structure, classification, and characteristic qualities of building stones, artificial stones, quarrying and blasting, preparation of bricks and tiles, cementing materials, plasters, paints, and varnishes, properties and preservation of timber, iron and steel, lead, copper, zinc, and the common alloys.

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IV.—GEODESY.

Use of the Scales, Prismatic Compass, pocket-Sextant, Level, Theodolite and Plane Table. Topographical surveying of limited areas. Practice of levelling. Route surveying and laying out curves. Elements of Practical Astronomy. (Attested Surveys, executed by the candidate, will be submitted to the Examiner, to which marks will be assigned).

V.—DRAWING.

1. Freehand Drawing,
2. Projection, (*a*) Orthographic, (*b*) Isometric (*c*) Perspective.

6. The Examination shall be conducted by means of printed papers, and a paper of questions shall be set in each of the following subjects :—

Computations and Mensuration.
Algebra, Trigonometry and Plane Analytical Geometry.
Statics and Dynamics.
Differential and Integral Calculus.
Chemistry.
Light and Heat.
Electricity, Magnetism, and the elements of Telegraphy.
Materials of construction.
Geodesy.
Drawing.

There shall also be a practical examination in Chemistry and Physics as defined in the Syllabuses prescribed in the respective subjects.

7. As soon as possible after the examination, the Syndicate shall publish a list of the successful candidates arranged in two divisions, each in order of merit. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

LICENCE IN ENGINEERING.

(*To be in force until the Examination of* 1912.)

1. An examination for a Licence* in Engineering shall be held annually in Calcutta, and shall commence at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

2. Any undergraduate of the University may be admitted to this examination on producing a certificate from the head of an institution affiliated up to the L.E. Standard in Engineering showing that he has prosecuted a regular course of study for one year after passing the First Examination in Engineering.

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* The holder of this Licence shall be styled a Licentiate in Engineering.

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3. Every candidate for admission to the Examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar at least fourteen days before the date fixed for the commencement of the examination.

4. A fee of twenty-five rupees shall be payable by each candidate. No candidate shall be admitted, unless he has paid this fee to the Registrar. A candidate who fails to pass or to present himself for examination shall not be entitled o claim a refund of the fee. A candidate may be admitted to one or more subsequent examinations on payment of a like fee of twenty-five rupees on each occasion.

5. Every candidate shall be examined in one of the following branches marked A and B:—

A.—(*Civil Engineering*).

I. Mathematics.
II. Natural Science.
III. Engineering Construction.
IV. Drawing.

I.—MATHEMATICS.

First Paper.

Statics and Dynamics.

(*a*) Principle of virtual work. Analytical conditions of equilibrium. Solution of problems in Statics by resolving and taking moments, by the principle of virtual work and by graphic methods.

Bending moments. The funicular poylgon. The Catenary. Equilibrium of simple jointed frame-works.

(*b*) Units and dimensions.

Statical equivalence of the externally impressed forces with the effective forces in any system of bodies; the principles of linear and angular momentum; the principles of *vis viva*.

Gravitational potential energy; potential energy of a stretched elastic string.

Motion under gravity of a particle on a smooth vertical circle and on other single curves; simple harmonic motion; the simple and conical pendulum.

Second Paper.

Hydrostatics.

Nature and general properties of fluid pressure.

Density and specific gravity of a homogeneous mixture.

Relations between pressure, density and force.

Thrust on a plane area. Centre of pressure.

Resultant pressure on an immersed solid on any immersed surface, particularly in the case of a homogeneous liquid at rest under gravity.

Condition for the equilibrium and for the stability of the equilibrium of a floating body.

Hydrostatic Instruments. Determination of specific gravity. Properties of gases.

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II.—NATURAL SCIENCE.

Geology.

I.—*Object of Geology.*—Its relations to other sciences. The doctrine of uniformity, its limits.

II.—*Astronomical Geology.*—Information obtained from meteorites and by the spectroscope. Probable history of the earth in its earlier stages of existence.

III.—*Geognosy.*—The globe and its envelopes. Shape and nature of globe; density; probable internal condition; evidences of pressure and internal heat. Persistence of continent ridges and abysmal depressions.

IV.—*Petrography.*—Macroscopic and Microscopic character of rocks. Microscopic elements; the importance for the study of the history of rocks. Microscopic character of quartz, orthoclase, plagioclase, augite, hornblende, olivine, calcite. Essential and accessory constituents. Classification of rocks. Characters and essential constituents of the following rocks:—Lime-stone, quartzite, amphibolite, gneiss, micaceous and chloritic schists, phyllite, granite, granophyr, quartz, porphyry, syenite, trachyte, phonolite, obsidian, pumice, norite, diorite, biobase, dolerite, plagioclase, basalt, sand and gravel, sand-stones, conglomerates, breccias, shale, clay, laterite, tuffs, shellmarl, coral, lime-stone, chalk, peat, lignite, coal, anthracite, graphite, petroleum, asphalt, clay, iron-stone.

V.—*Dynamical Geology.*—Volcanic phenomena, description of volcanoes —kind, shape, description, relation to lines of weak resistance and instability. Theories of volcanicity. Hot springs. Earthquakes. Secular upheaval and depression. Geological functions of air. Geological functions of water and ice. Chemical and mechanical action, denudation and depositions, Peculiarities of Indian rivers; glacial erosion; formation of lakes. Geological functions of plants and animals; coral islands.

VI.—*Petrogenetic Geology.*—Origin of granite, diorite, and basalt. Origin of sedimentary rocks; minerogen, phytogen and zoogen sedimentary rocks; theories on the origin of coal beds. Origin of laterite. Origin of metamorphic rocks, theories of metamorphism, local and regional metamorphism. Origin of rock-cleavage. Ore deposits. Origin and classification.

VII.—*Architectonic Geology.*—Forms of bedding. Surface-markings. Concretions. Relative strata. Overlap. Groups of strata. Joints. Strike and dip; outcrop; monocline; syncline; anticline. Faults, origin and kinds. Intrusive phase of eruptivity; bosses, sheets, dykes, necks; inter-bedded phase of eruptivity, lavas, tuffs. Unconformability.

VIII.—*Palæontological Geology.*—Object. Conditions for the entombment of organic remains. Preservation of organic remains in mineral masses; fossilizator. Uses of fossils in Geology.

IX.—*Historical Geology*—Leading principles in stratigraphy. Equivalent strata, absence strata, and formations.

X.—*Indian Geology.*—With special reference to the Geology of the Bengal Presidency. Peninsular area. The metamorphic and crystalline series. The transition series. Lower and upper Vindhyas; petrology; the Vindhyan basin. The Gondwana system; geological positions and characters, probable fluviatile origin; relations of Gondwana basins to existing valleys; lower and upper groups, Talchir-Karharbari, Barakar iron-stone, shales, Raniganj, Rajmahal; the most important coal fields. The Deccan trap series, area and petrology. Laterite; distribution, age. Post-tertiary and recent formations; older river gravels and clays; kankar. Indo-Gangetic plain; upland and alluvial soils, red soils, regur, peat. General outlines of the Geology of the Himalayan area.

XI.—*Physiographical Geology.*—Terrestrial features due to disturbance of crust, monoclival, symmetrical, unsymmetrical, reversed flexures, Alpine

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type of mountain structure. Features due to volcanic action. Features due to erosion. Indian examples.

XII.—*Field Geology*.—Geological surveying instruments, tracing of boundaries and faults. Sections; how to find direction and amount of dip; Dalton's construction, clinometer. Levelling. Surface, profile, datum, level; benchmarks; methods of geological levelling. Lithology; practical excersises in the identification of Indian rocks.

Mineralogy.

Province of Mineralogy, its Relation to other Sciences.

I.—Properties of crystals independent of direction. Density and specific gravity. Methods of determining specific gravities; hydrostatic balance; pyknometer, Jolly's balance; floatation methods. Separation of rock-forming minerals by the floatation method.

II.—*Physical Crystallography*.—Elasticity. Relation of co-efficient of elasticity to direction. Classification of crystals with reference to elasticity.

Cohesion. Cleavage, fracture, hardness: Mohs' scale.

Optical properties of minerals. Kind and degree of lustre. Double refraction and polarization. Nicol's prism. Classification of crystals according to their optical properties.

Uni-axial and bi-axial crystals. Examination of crystals in parallel and convergent polarized light. Rotation of plane of polarization. Absorption of light; idiochromatic and allochromatic minerals; pleochroism; Haidinger's dischroscope, microscope, with one nicol.

Electrical properties. Pyro-electricity. Magnetic properties. Separation of rock-constituents by the electro-magnet.

III.—*Geometrical Crystallography*.—Relation of physical properties to geometrical form. Crystalline form; faces. Planes of reference, axes, parameters, indices; symbols. Law of rationality of indices. Principles of Miller's Weiss' Naumann's notation. Fundamental form; its selection. Symmetry: planes and axes. Classes and systems. Simple forms and combinations. Closed and open forms; prismatic, tabular, and pyramidal habit. Nature of hemihedrism. The nature of tetartohedrism. Hemimorphism. Crystallographic mimicry. Isomorphism and heteromorphism. Morphotrophism and isogonism. Twinning: twinning plane; twinning axes. Contact twins and penetration twins; distinctive features of hemitropes. Crystalline aggregates, druses. Pseudomorphism. Measurement of angles; contact and reflecting goniometers; relative merits.

IV.—*Chemical Mineralogy*.—Calculation of formula. Classification of minerals. Group tests.

V.—*Descriptive Mineralogy*.—A somewhat detailed description of the following minerals:—

Elements—Diamond, gold.

Sulphides—Pyrite, marcasite, pyrhotite, galena, sphalerite, chalcopyrite.

Oxides—Corundum, hematite, spinel, magnetite, quartz, cassiterite, limonite.

Oxysalts:—

(*a*) Carbonates—Calcite, dolomite, siderite, arragonite, malachite.

(*b*) Sulphates—anhydrite, barite, gypsum.

(*c*) Phosphates—Apatite.

(*d*) Silicates—Tourmaline, epidote, olivine, garnet, muscovite, biotite, talc, serpentine, pyroxene, amphibol, orthoclase, microcline, albite, aligoclase, labradorite, kaolinite.

Haloid salts—Halite, fluorite.

VI.—*Practical exercises*.—Determination of specific gravities. Use of

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the scale of hardness. Excercise at the polarization microscope. Measurement of angles by the aid of contact and reflecting goniometers. Blow-pipe analysis. Identification of Indian minerals.

Practical Metallurgy.—

Preparation of common alloys of known composition (and determination of the tensile strength of the alloys prepared).

(Mechanical testing of mortars and cements).

Fire testing of the qualities of clays and brick earths.

Determination of ash, coke, and sulphur in fuels.

Determination of the calorific power of fuels by the Thomson and Hempel calorimeters. Determination of furnace temperatures by some form of pyrometer.

Rough analysis of products of combustion.

Furnace gases and gases from gas-engines.

VII.—*Mechanics of a Machinery.*—Simple practical applications of kinematics and dynamics of machinery. Elementary forms of machines. Gearing for transmitting and modifying motion.

Steam-Engine.—Heat and work. Properties of steam.

Indicators and indicator diagrams. Valve motion. Modern types of steam-engine. Details of construction. Governor's fly-wheels. Condensers, Boilers; their construction and working; boiler fittings. Piping Feed-pumps and injectors. Feed water. Heaters and economisers.

Tests of engines and boilers.

Gas and oil engines. General principles of action. Conditions of economical working.

Physics.

PRACTICAL EXERCISES.

Tracing of the B.H. course by means of Du Bois' Balance and Leonard's Bismuth Spiral. Experiments with Ewing's Curve Tracer and Ewing's Hysteresismeter. Determination of the Horizontal component of Terrestrial Magnetism by means of Kelvin's apparatus. Experiments with direct current apparatus. Constructional details of a direct-current Dynamo. Running of dynamos, Characteristics of series, shunt and compound dynamos, Armature characteristics. Magnetisation curves of dynamos. Characteristic of a Thomson-Houston arc-dynamo: efficiency of dynamos and motors with and without Dynamometers. Study of arc-lamps. Calibration of ammeters and voltmeters. Construction and testing of electricity-supply meters. Exploration of the field of a dynamo; S. P. Thomson's method; the Dynamo Indicator; Leonard's Bismuth Spiral; coefficient of magnetic leakage; power lost by Hysteresis and Foucault currents. Effects of variation of speed; variation of economic coefficient.

Experiments with alternate current apparatus. Study of alternate currents by means of the Oscillograph. Constructional details of alternate current generators. Curve of Magnetisation. Exploration of the field. Coefficient of self-induction of coils; Impedance method, three voltmeter method; variation of inductance with current. Saturation of core, Resistance in series circuits. Measurement of power; three-voltmeter method, three-amperemeter method. Effect of frequency on the angle of lag. Measurement of mutual inductance. Construction of transformers. Transformer tests. Measurement of capacity of a condenser. Comparison of capacities. Effects of capacity in alternate current circuits. Experiments with triphase generators and motors.

III.—ENGINEERING CONSTRUCTION.

Practice of Building.—Brick and stone masonry, earthwork, carpentry-foundations, walls, floors and roofs of buildings, construction of masonry;

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wooden and iron bridges, construction and maintenance of roads, construction of railroads and railway appliances.

Hydraulic Engineering.—Canal and river engineering, river training and improvements, flow of liquids through orifices: flow of liquids in pipes. The movements of water in canals and rivers, flow of water over weirs and waste weirs, afflux of fluids caused by obstruction, water-wheels and turbines, storage of water, supply of water to town.

Applied Mechanics.—Direct stresses, bars and pillars of various forms in tension and compression, transverse strain, deflection of beams, resistance to torsion. The equilibrium, stability, and strength of framed structures. stability of suspension bridges. Theory of earth pressure, and resistance of block work structures. Elements of Graphic Statics.

Mechanism.—Elementary forms of machines, levers, cranks, rolling contacts, sliding contacts; mechanism for modifying motions, accumulation and regulation of motion.

Steam-Engine.—Measurement of heat, Joule s equivalent, indicators and indicator diagrams, boilers, heating surface, injectors and all other parts of high and low-pressure engines.

(Attested designs for an engineering work, executed by the candidate, will be submitted to the Examiner, to which marks will be assigned).

IV.—DRAWING.

Engineering and Architectural Drawing.

B.—(*Mechanical Engineering*).

I.—Mathematics.	III.—Machinery.
II.—Engineering Construction.	IV.—Drawing.

I.—Mathematics.

As laid down for the examination for branch A.

II.—Engineering Construction.

Practice of Building.—As laid down for the examination for branch A.

Applied Mechanics.—As laid down for the examination for branch A.

Steam-Engine.—Ths steam-engine as viewed under a knowledge of the doctrine of latent heat, with history of improvements and alteration in original theories, combustion of fuel, heat, engines. The conversion of motion, indicators and details of construction, boilers, compound cylinder engines, miscellaneous details.

Hydraulic Engineering.—Hydraulic machinery, flow of water in pipes.

III.—Machinery.

Mechanism and Machine Design.—Elementary forms of machines, levers. cranks, rolling contacts, sliding contacts, mechanism for modifying motions, accumulation and regulation of motion. Mode of designing rivetted joints, fastenings, journals, pivots, axles, shaftings, bearings, strength, and form of toothed gearing, belt and rope gearing, link pistons, stuffing boxes, valves and cocks.

Workshop Appliances.—Measures of length and methods of measuring. Hand tools for wood and metals. Forming straight edges and surface plates. Foot and power lathe. Machinery for drilling, boring, planing, shaping, slotting, punching, shearing, and sawing. Distribution of motive power to machine tools.

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Designs.—Designs of factories and workshops with arrangement of machinery.

(Attested designs, executed by the candidate will be submitted to the Examiner, to which marks will be assigned.)

IV.—DRAWING.

Machine Drawing.

6. Candidates shall also be allowed to present themselves for examination in one or more of the following optional subjects, the marks obtained in which shall not be counted towards a pass, but being added to the marks of such candidates as have passed in the compulsory subjects, the total of the marks so obtained shall be used for determining the division in which each successful candidate shall be placed. Those obtaining a total of 2,666 marks or upwards to be placed in the First Division, and between 2,000 and 2,666 marks in the Second Division :—

Optional Subjects.

I.—MATHEMATICS—

Pure Mathematics, Mixed Mathematics } *as in the First Examination in Engineering.*

II.—NATURAL SCIENCE—

Chemistry, Physics } *as in the First Examination in Engineering.*

III.—ENGINEERING CONSTRUCTION—

Materials of Construction *as in the First Examination in Engineering.*

IV.—GEODESY, *as in the First Examination in Engineering.*

7. The examination shall be conducted by means of printed papers, and a paper of questions shall be set in each of the following subjects :—

Branch A.

Statics and Dynamics.
Hydrostatics.
Geology.
Mineralogy and Metallurgy.
Details of Construction.
Roads and Railways.
Hydraulic Engineering.
Applied Mechanics.
Mechanism and Steam-Engine.
Engineering and Architectural Drawing.

Branch B.

Statics and Dynamics.
Hydrostatics.
Details of Construction.

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Roads and Railways.
Applied Mechanics.
Hydraulic Engineering.
Mechanism and Machine design.
Designs and Workshop appliances.
The Steam-Engine.
Machine Drawing.

Optional.

Pure Mathematics.
Mixed Mathematics.
Chemistry.
Physics.
Materials of Construction.
Geodesy.

There shall also be a practical examination in Mineralogy and Metallurgy and in Physics, as defined in the Syllabuses prescribed in the respective subjects.

8. As soon as possible after the examination, the Syndicate shall publish a list of the successful candidates arranged in two divisions, each in order of merit. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

BACHELOR IN ENGINEERING.

(*To be in force until the Examination of* 1910.)

1. An examination for the degree of Bachelor in Engineering shall be held annually in Calcutta, and shall commence at such time as the Syndicate shall determine, the date to be approximately notified in the Calendar for the year.

2. Any candidate who has passed the First Examination in Arts* may be admitted to this examination, provided he produces a certificate from the Head of an Institution affiliated up to the B.E. Standard in Engineering showing that he has prosecuted a regular course of study for one year, after passing the First Examination in Engineering.

3. Every candidate for admission to the examination shall send his application, with a certificate in the form entered in Appendix A, to the Registrar, at least fourteen days before the date fixed for the commencement of the examination.

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* Any under-graduate who has passed the First Examination in Engineering may proceed to the First Examination in Arts and the Bachelor of Arts Examination, without completing the two years of study at an affiliated institution required under paragraph 2 of the First Arts and B.A. Regulations.

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4. A fee of thirty rupees shall be payable by each candidate. No candidate shall be admitted unless he has paid this fee to the Registrar. A candidate who fails to pass or to present himself for examination shall not be entitled to claim a refund of the fee A candidate may be admitted to one or more subsequent examinations on payment of a like fee of thirty rupees on each occasion.

5. Every candidate shall be examined in the subjects and in the manner ordered in paragraphs 5, 6 and 7 of the Regulations for a Licence in Engineering.

6. As soon as possible after the examination, the Syndicate shall publish a list of the successful candidates arranged in two divisions, each in order of merit. Every candidate shall, on passing, receive a certificate in the form entered in Appendix A.

7. The first candidate of the first division shall receive a gold medal of the value of one hundred rupees.

. Any Licentiate in Engineering, who has passed the First Examination in Arts, may, on paying the usual fee, be admitted to the degree of Bachelor in Engineering without further examination.

HONOURS IN ENGINEERING.

(*To be in force until the Examination of* 1907.)

1. An examination for Honours in Engineering shall be held annually in Calcutta, commencing at such time as the Syndicate shall determine, the date to be notified approximately in the Calendar for the year.

A candidate may be examined in one or more of the following subjects :—

I. Civil Engineering.
II. Mining Engineering.
III. Electrical Engineering.

2. Any candidate who has passed in that or any previous year the examination for the degree of " Bachelor in Engineering " or for a " Licence in Engineering " shall be eligible for admission to the examination for Honours.

3. Every candidate shall send in his application to the Registrar at least three months before the date fixed for the commencement of the examination.

4. A fee of rupees one hundred shall be payable by each candidate, and no candidate shall be admitted until he has paid this fee to the Registrar. A candidate who fails to pass or to present himself for examination, shall not be entitled to claim a refund of the fee. A candidate may be admitted to one or more

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subsequent examinations on payment of a like fee of rupees one hundred on each occasion.

5. The subjects of examination are defined as follows :—

I.—Civil Engineering.

(*a*)—*Mathematics.*

(1) Statics. The composition and resolution of forces acting in one plane on a particle or rigid body. Moments. Bending moments. Conditions of equilibrium of a particle or rigid body acted on by forces in the plane. Force diagram of a system of forces in equilibrium. Meaning of virtual work and work done by a force. Applications of the above to the solutions of problems (the candidate to be allowed the option of adopting the graphic method of solution). Equilibrium of constrained bodies and the simple machines. Determination of centroids. Friction. The funicular poylgon. The catenary. Application to roofs and bridges.

(2) Dynamics. *Kinematics.* Velocity and acceleration, uniform and variable. Angular velocity. Numerical value of velocity or acceleration dependent on units of time length. Relative velocities and accelerations. Composition and resolution of velocities and acceleration. Formulæ connecting time and distance described, Velocity and acceleration.

Kinetics.—Newton's laws of motion, especially the scholium to the third law, with applications and illustrations of the same in the working of examples. The doctrine of the dimensions of physical quantities. Relation between force, mass moved, and acceleration produced. Attwood's machine. Motion of projectiles in vacuo. Direct impact of bodies. Co-efficient of restitution. Constrained motion of bodies sliding down smooth Curves. The doctrine of the simple harmonic motion with application to the pendulum. Uniform motion in a circle. Conical pendulum. The principles of work and energy. Conservation of energy. The motion of a rigid body in two dimensions, in particular, round a fixed horizontal axis under the action of gravity. The Compound pendulum. The ballistic pendulum. Moments of inertia.

(3) Geometrical Optics. The reflexion and refraction of light. Mirrors, prisms, lenses. The formation of images. The microscope, the telescope and Hadley's sextant. The spectrum, the spectroscope.

(4) Spherical Trigonometry. Euclid, Book XI, Propositions 1-21. Elementary formulæ for the trigonometrical functions of the parts of a triangle. Napier's analogies. Gauss' theorems. The solution of triangles.

(*b*)—*Engineering.*

(1) Applied Mechanics.

(2) Hydraulics.

(3) Theory and practice of building. Properties of building materials. Road, railway, canal, and river Engineering.

(*c*)—*Geodesy.*

General principles of surveying, with the theory and use of instruments used in surveying. Measurement of base lines with corrections for level and temperature. Reductions of angles to the plane of the horizon. Reduction to the centre. Spherical excess. Method of distributing errors. Calculation of sides of triangles by the method of chords, by Legendre's theorem or by spherical trigonometry, Determination of latitudes, longitudes and azimuths. Heights of stations and terrestrial

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refraction. Measurement of arcs of latitude and longitude. Determination of the figure of the earth by geodetic measurement and by the pendulum.

The examination shall be both written and oral; the written examination shall be conducted by means of printed papers in each of the following subjects :—

(1) Statics and Optics.
(2) Dynamics and Spherical Trigonometry.
(3) Geodesy.
(4) Do.
(5) Applied Mechanics.
(6) Do. do.
(7) Hydraulics.
(8) Do.
(9) Practice of building.
(10) Do. do.

II.—Mining Engineering.

(*a*) *Mathematics*, as in the course for Civil Engineering.

(*b*) *Electricity*, in its application to Mining, with special reference to electric bell signalling, electric light installation, and electric transmission of power underground.

(*c*) *Principles of Mining*, together with a knowledge of the Machinery used in Mining.

Preliminary research. Trenching. Costeaning, etc. Deep-boring, and apparatus employed. Tools used in various mining operations. Methods used in ventilating, lighting, and draining mines. Sinking of shafts. Driving levels, etc., and the methods adopted for protecting them by timbering, masonry, etc. Tubbing. Exploiting. The different systems used in working excavations, etc., and the methods employed for securing them while kept open. Management of shaft for hoisting, travelling, and ventilation purposes, and the methods adopted for the prevention of accidents. Management of underground roads, carriage, hauling, and transport of minerals, etc. Mechanical preparation and dressing of ores. Different methods of working coal, etc.

(*d*) *Geology and Mineralogy*—

Geology.—Petrology; Architectonic Geology; General Geology of India, with a special knowledge of the Gondwana system. Transition series and the Metamorphic Series.

Mineralogy.—Practical determination of minerals.

(*e*) *Metallurgy.*—Including the treatment and analysis of coal. The knowledge of the candidate to be tested practically.

Physical properties of metals.—Testing machines; influence of impurities on the properties of iron and copper.

Alloys.—Effect of temperature changes on metals and alloys, with special reference to steel; annealing, hardening, tempering.

Fuel.—Classification; manufacture of coke; Wilson's gas producer; water gas; absolute, specific, and pyrometric heating power; assay of coal; Wright's calorimeter.

Materials.—Ores; fluxs, slags; oxidising and reducing agents; calculation of furnace charges.

Furnaces.—Hearths, for roasting and refining and liquation; shaft furnaces; iron-blast furnace, Rachette, Pilz, Cupola; reverbertory furnaces; puddling-furnace, furnaces used in the smelting for copper and tin, cupellation; closed-vessel furnaces. Deville's blast-furnace, furnace used

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in the reduction of blende and cinnabar, and in the manufacture of cement steel. the converter. Means of supplying air ; chimneys, blowing engines. Cowper's and Whitwell's stoves.

Metallurgical Processes.—Classification ; outlines of typical processes ; blast furnace process ; puddling Dank's furnace ; Siemens' open hearth ; Siemens-Martin ; Bessemer, basic process, Darby's recarburisation process, tungsten steel, mitis metal. The Idria process. Tin smelting. Extraction of zinc by the Belgian and Silesian methods. Heroult's aluminium process. Welsh process of extracting copper from copper pyrites. Lead smelting, Flintshire. Extraction of silver from lead, Parks, Patinson. Cupellation. Concentration of gold in batteries, modern pan amalgamation. Augustin's wet process, as practised in America ; Plattner's chlorine process. Methods of producing sound casting.

General consideration.—Capital and labour ; causes of failure.

The examination shall be both written and oral ; the written examination shall be conducted by means of printed papers in each of the following subjects :—

(1) Statics and Optics.
(2) Dynamics and Spherical Trigonometry.
(3) Electricity.
(4) Geology.
(5) Do.
(6) Mineralogy.
(7) Mining.
(8) Do.
(9) Metallurgy.
(10) Do.

III.—Electrical Engineering.

(*a*) *Theoretical.*—A knowledge of the principles of Electricity and Magnetism necessary for the proper understanding of the processes and instruments used in the following division of the subject :—

(*b*) *Telegraphy and allied subjects*—

Lines.—Survey of proposed route. Preparation of specification for material and instruments. Tests, mechanical and electrical, to be applied to material. Erection and maintenance of line. Tests of insulation, resistance capacity of line. Testing of insulators. Faults, their prevention and localisation.

Office.—Its construction and arrangement. Batteries and instrument —their construction, maintenance, and testing.

Different systems of telegraphy. Methods for increasing the carrying power of lines. Duplex, quadruplex, and multiplex telegraphy.

Cables.—Submarine and river, their construction, laying, maintenance, working, and testing.

Application of telegraphy and other electrical apparatus to Railway working.

Earth currents and other disturbances in working Telephones and Microphones. Different forms in practical use. Laying of lines, aerial and underground. Prevention of disturbances from electrical installations. Central exchanges. Lightning conductors and guards, their construction and application to houses, telegraph offices, lines and cables.

(*c*) *Electric Lighting and Transmission of power.*—The electromagnet, its construction and theory. On the relation between magnetising current, magnetism and induction, as experimentally determined. Application of these results to the dynamo.

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Dynamos.—Preparation of designs for dynamos required for a specified purpose and output. Theory of the dynamo, direct and alternate. Approved types of dynamos according to recent practice. Characteristic curves. Determination of efficiency of dynamos. Lamps. Construction and working of arc lamps of approved type. Incandescent lamps. Arrangement of arc and incandescent lamps in circuit. Photometry. Measurement of efficiency of lamps.

Central Station.—Use of water power in prime motors. Boilers and engines best suited for proposed work. Test of their efficiency. Leading methods of central station, distribution of electrical energy by direct and alternate currents. Overhead and underground mains. Methods of insulations adopted in both. Loss of energy in mains. Relation of diameter of conductor to current carried. Devices for regulation of electromotive force and current. Measuring instruments, switches, fuses used in a Central Station.

Batteries.—Secondary batteries, their construction, theory, maintenance, and use in the distribution of electricity.

Transformers, their construction, theory, and use in the distribution of electricity.

Transmission of power by means of electricity. Electro-motors. Theory and construction of electro-motors, direct and alternate. Their use in railways, tramways, and in general machinery. Arrangement of line between generating station and place of distribution.

Electric Welding.

(*d*) *Electro-metallurgy.*

Electro—deposition of metals and reduction of ores. Construction of dynamos specially designed for these purposes.

(*e*) *Instruments.*

Theory of electrical measurements. The construction and use of electrical standards of Potential, Resistance, Capacity, and Inductance. Galvanometers and other instruments required in the use of these standards. Commercial instruments, their theory, construction, use, and comparison with standards, Induction Coils.

(*f*) *Dynamometers*, their theory and use in the testing of the efficiency of dynamos and motors.

(*g*) A practical paper to test the knowledge of the candidate in the method of Electrical Measurement.

(*h*) *Mathematics*, as in the course for Civil Engineering.

The examination shall be both written and oral; the written examination shall be conducted by means of papers in each of the following subjects :—

(1) Statics and Optics.
(2) Dynamics and Spherical Trigonometry.
(3) Theory of Electricity and Magnetism.
(4) Telegraphy.
(5) Do.
(6) Electric Lighting and Transmission of Power.
(7) Do. do.
(8) Do. do.
(9) Electro-metallurgy and Electrical Instruments.
(10) Practical Examination in Electrical Measurements.

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MASTER IN ENGINEERING.

(*To be in force until the Examination of* 1909.)

1. No special examination shall be held, but any person who has graduated as B.E. and has at any time passed the Honours Examination, may be admitted to the degree of Master in Engineering without examination, provided that—

(1) Two members of the Faculty of Engineering or two Masters in Engineering shall testify to the satisfaction of the Syndicate that, since graduating, he has practised his profession with repute for four years, and that in habits and character he is a fit and proper person for the degree of Master.

(2) He shall produce an Essay, approved by the President of the Faculty of Engineering for the time being, on some subject connected with Engineering.

2. A fee of one hundred rupees shall be payable for the degree of Master in Engineering. No candidate shall be admitted unless he has previously paid this fee to the Registrar.

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Appendix A.

(1) FORMS OF APPLICATION FOR ADMISSION OF MALE CANDIDATES.

ENTRANCE EXAMINATION.

(Form of application to be used only by candidates who appear as students of a High School, recognised by the Calcutta University.)

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Entrance Examination of the Calcutta University.

The Entrance fee* of Rupees 10 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that I know nothing against the moral character of the above-named candidate; that he has not already passed the Entrance Examination of the Calcutta University; that judging from the exercises that he has sent up and the test examination to which he has submitted, there is in my opinion a reasonable probability of his now passing the Entrance Examination; that he has signed the above application in my presence; and that I believe the subjoined account to be true.

The certificate of every candidate who is not a private student, must be signed by the Principal or Head Master of the High School† from which he appears.

His age is, to the best of my information and belief years, months.

The 19 .

Particulars to be filled in by the Candidate.

1. Name.
2. Age in Years and Months.
3. Religion.
4. Race (i.e., *nation, tribe, &c., &c.*).
5. Where educated.
6. Present position (i.e., *at school or present occupation*).

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* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

† A High School is a school recognised by the University as qualified to send up candidates to the Entrance Examination.

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7. Whether he has appeared at the Entrance Examination of any previous year.
8. Town or village where resident.
9. Name of father or guardian.
10. Where to be examined.*
11. Language in which, besides English, to be examined.

(*Second Language Morning Paper.*)

12. Vernacular language from and into which translation is to be made.†

(*a*) *English Afternoon Paper.*
(*b*) *Second Language Afternoon Paper.*

13. Whether he has taken up Drawing (Optional Subject).

ENTRANCE EXAMINATION.

Form of application for candidates other than students of a High School.)‡

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Entrance Examination of the Calcutta University.

The Entrance fee of Rupees 10 § is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

This certificate is to be signed (or countersigned) by an Inspector of Schools.||

I certify that I know nothing against the moral character of the above-named candidate; that he has not already passed the Entrance Examination of the Calcutta University; that judging from a test examination which he has submitted, there is a reasonable probability of his

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* The following places have been appointed for holding the examination:—

Akyab, Balasore, Bankura, Barisal, Bassein, Berhampur, Bhagalpur, Burdwan, Calcutta, Chittagong, Cooch-Behar, Dacca, Darjeeling, Debrugarh, Gauhati, Hazaribagh, Hughli, Katak, Krishnagar, Mandalay, Maulmein, Midnapur, Pabna, Patna, Purulia, Rampur-Baulia, Ranchi, Rangoon, Shillong, Silchar and Sylhet.

† Sub-head (*a*) is not to be filled up by candidates whose Vernacular is English, and sub-head (*b*) need not be filled by candidates taking up any of the following languages:—

Greek, Latin, Hebrew, Armenian, French, or German.

‡ A High School is a school recognised by the University as qualified to send up candidates to the Entrance Examination.

§ The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

|| A student who does not appear from any school, or who has been transferred since the 1st of September next preceding the examination, without the consent of an Inspector, to the school from which he appears, will be

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now passing the Entrance Examination; that he has signed the above application in my presence; and that I believe the subjoined account to be true.

His age is, to the best of my information and belief* years, months.

The 19 .}

Particulars to be filled by the Candidate.

1. Name.
2. Age in Years and Months.
3. Religion.
4. Race (i.e., *nation, tribe, &c., &c.*).
5. Where educated.
6. Present position (i.e., *at school or present occupation*).
7. Whether he has appeared at the Entrance Examination of any previous year.
8. Town or village where resident.
9. Name of father or guardian.
10. Where to be examined.†
11. Language in which, besides English, to be examined.

(*Second Language Morning Paper.*)

12. Vernacular language from and into which translation is to be made.‡
    (*a*) *English Afternoon Paper.*
    (*b*) *Second Language Afternoon Paper.*
13. Whether he has taken up Drawing (Optional Subject).

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treated as a private student. The Inspector's sanction shall not be considered sufficient unless special grounds appear on the face of it. It shall be in the power of the Inspector to instruct a private student to attend the test examination of a Government or other High School instead of holding a test examination himself, and to authorise the Head Master of such school to sign the application from the student, which must afterwards be countersigned by the Inspector. No private student will be admitted to a test examination unless accompanied, for the purpose of identification, by some person known to the officers conducting the test examination.

* A transfer certificate should, if possible, be produced.

† The following places have been appointed for holding the Examination :—

Akyab, Balasore, Bankura, Barisal, Bassein, Berhampur, Bhagalpur, Burdwan, Calcutta, Chittagong, Cooch-Behar, Dacca, Darjeeling, Debrugarh, Gauhati, Hazaribagh, Hughli, Katak, Krishnagar, Mandalay, Maulmein, Midnapur, Pabna, Patna, Purulia, Rampur-Baulia, Ranchi, Rangoon, Shillong, Silchar and Sylhet.

‡ Sub-head (*a*) is not to be filled up by candidates whose Vernacular is English, and sub-head (*b*) need not be filled by candidates taking up any of the following languages :—

Greek, Latin, Hebrew, Armenian, French, or German.

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FIRST EXAMINATION IN ARTS.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing First Examination in Arts of the Calcutta University.

The fee * of Rupees 20 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that the above-named candidate has satisfied me by the production of the Registrar's certificate that he has passed the Entrance Examination of the University of Calcutta; that he has completed in one or more of the affiliated institutions the course of instruction prescribed by this University for the F.A. Examination; that I know nothing against his moral character, and that I believe the subjoined account to be true.

This certificate is to be signed by the Principal or Head Master of the affiliated Institution in which the candidate has studied, and in the case of those Deputy-Inspectors of Schools, Sub-Inspectors of Schools, and *bona-fide* Masters of English Schools who have served as such for the full period of two academical years, by the Inspector of Schools in whose circle they are employed.

The 19 .

Particulars to be filled in by the Candidate.

Age.
Date of entrance.
Race (i.e., *nation, tribe, &c., &c.*).
Religion.
Where to be examined.
Whether he has appeared at the First Arts Examination of any previous year.
Language in which, besides English, to be examined.

Name of the fifth compulsory subject.
Name of the optional subject, if any.

Whether he intends to take up the optional paper in Original Composition, and if so, whether in Bengali, Hindi, Uriya, or Urdu.

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* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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Particulars to be filled in by the Principal, &c.

* College or Colleges attended during the two years.	Date of Admission.	Number of Lectures in															
		English.		Mathematics.		2nd Language.		Physics and Chemistry.		History.		Logic.		Optional Subject.			
		Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).		

Principal.

* The number of lectures delivered in each College must be separately stated.

(*a*) If a student has attended only one College during the two years of study required by the Regulations, this column must show the total number of lectures delivered in the College during the two years, the lectures in each year being counted from the date on which the College opened after the summer vacation, and not from the date on which the student was admitted.

If a student has attended more than one College during the two years, the lectures in the College first attended must be counted from the beginning of the Session to the date on which a Transfer Certificate is given; in the College or Colleges subsequently attended, the lectures must be counted from the date of the Transfer Certificate on which the student is admitted to the date on which a fresh Transfer Certificate is given or to the date of application for admission to the F.A. Examination.

(*b*) This number must not include any lectures attended before the receipt of the Transfer Certificate.

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B.A. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Examination for the degree of Bachelor of Arts in the * Course.

The fee† of Rupees 30 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that the above-named candidate has satisfied me, by the production of the Registrar's certificate, that he has passed the First Examination in Arts of the University of Calcutta; that he has completed, in one or more of the affiliated Institutions, the course of Instruction prescribed by this University for the B.A. Examination; that I know nothing against his moral character, and that I believe the subjoined account to be true.

This certificate is to be signed by the Principal or Head Master of the affiliated Institution in which the candidate has studied, and in the case of those Deputy Inspectors of Schools, Sub-Inspectors of Schools, and *bonâ-fide* Masters of English Schools who have served as such for the full period of two academical years, by the Inspector of Schools in whose circle they are employed.

The 19 .

Particulars to be filled in by the Candidate—

Age.
Date of Entrance.
Date of Passing the First Examination in Arts.
Race (i.e., *nation, tribe, &c., &c.*)
Religion.
Where to be examined.
Whether he has appeared at the B.A. Examination of any previous year.
Whether he has taken up the A Course or the B Course.
Whether he is a candidate for the Government Scholarship tenable in England.
Whether he intends to take up the optional paper in Original Composition, and if so, whether in Bengali, Hindi, Uriya, or Urdu.

Subjects in which he desires to be examined.

No.	Pass.	Honours.
1		
2		
3		

N.B.—(1) *It must be definitely shown whether the candidate takes up the Pass or the Honours Course in each subject by entering it in its appropriate column.*

* State whether in the A or the B Course.

† The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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(2) *It must be definitely stated which alternative subject and which alternative subdivision of each subject the candidate takes up.*

Thus [*A Course*] 3. Second language, Latin. *Or* 3. History of England, Greece, and Rome. *Or* [*B Course*] 3. Physiology and Botany.

Particulars to be filled in by the Principal, &c.

* College or Colleges attended during the two years.	Date of Admission.	Number of Lectures in					
		English.		Second Compulsory Subject. (I).		Optional Subject. (I).	
		Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).

Principal.

(1) The subject must be named.

(*a*) If a student has attended only one College during the two years of study required by the Regulations, this column must show the total number of lectures delivered in the College during the two years, the lectures in each year being counted from the date on which the College opened after the summer vacation, and not from the date on which the student was admitted.

If a student has attended more than one College during the two years, the lectures in the College first attended must be counted from the beginning of the session to the date on which a Transfer Certificate is given; in the College or Colleges subsequently attended, the lectures must be counted from the date of the Transfer Certificate on which the student is admitted, to the date on which a fresh Transfer Certificate is given, or to the date of application for admission to the B.A. Examination.

(*b*) This number must not include any lectures attended before the receipt of the Transfer Certificate.

B.A. EXAMINATION.

(*Form of application for candidates other than students of an affiliated Institution*).

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Examination for the degree of Bachelor of Arts in the † Course.

The fee‡ of Rupees 30 is forwarded herewith.

I am, &c., &c.

---

* The number of lectures delivered and attended in each College must be separately stated.

† State whether in the A or the B Course.

‡ The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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CERTIFICATE.

I certify that the above-named candidate has satisfied me, by the production of the Registrar s certificate, that he has passed the First Examination in Arts of the University of Calcutta; that I know nothing against his moral character; and that I believe the subjoined account to be true.

This certificate is to be signed by an Inspector of Schools.

The 19 .

Particulars to be filled in by the Candidate—

Age.
Date of entrance.
Date of passing the First Examination in Arts.
Race (i.e., *nation, tribe, &c., &c.*)
Religion.
Where to be examined.
Whether he has appeared at the B.A. Examination of any previous year.
Whether he takes up the A Course or the B Course.
Whether he is a candidate for the Government Scholarship tenable in England.
Whether he intends to take up the optional paper in Original Composition, and if so, whether in Bengali, Hindi, Urdu, or Uriya.

Subjects in which he desires to be examined.

No.	Pass.	Honours.
1		
2		
3		

N.B.—(1) *It must be definitely shown whether the candidate takes up the Pass or the Honour Course in each subject by entering it in its appropriate column.*

(2) *It must be definitely stated which alternative subject and which alternative subdivision of each subject the candidate takes up.*

Thus [*A Course*] 3. Second language, Latin. *Or* 3. History of England, Greece, and Rome. *Or* [*B Course*] 3. Physiology and Botany.

B.Sc. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing examination for the degree of Bachelor in Science.

The fee* of Rupees 30 is forwarded herewith.

I am, &c., &c.

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* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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CERTIFICATE.

I certify that the above-named candidate has satisfied me, by the production of the Registrar's Certificate, that he has passed the First Examination in Arts of the University of Calcutta; that he has completed, in one or more of the affiliated institutions, the course of instruction prescribed by this University for the B.Sc. Examination; that I know nothing against his moral character; and that I believe the subjoined account to be true.

This certificate is to be signed by the Principal or Head of the affiliated Institution in which the candidate has studied.

The 19 .}

Particulars to be filled in by the Candidate—

Age.
Date of entrance.
Date of passing the First Examination in Arts.
Race (i.e., *nation, tribe, &c., &c.*)
Religion.
Whether he has appeared at the B.Sc. Examination of any previous year.
Whether he is a candidate for the Government Scholarship tenable in England.

Subjects in which he desires to be examined.

	No.	Pass.	Honours.
Compulsory Subjects.	1		
	2		
	3		
	4		
Optional Subjects.	5		
	6		

N.B.—(1) *It must be definitely shown whether the candidate takes up the Pass or the Honour Course in each subject by entering it in its appropriate column.*

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Particulars to be filled in by the Principal, &c.

* College or Colleges attended during the two years.	Date of Admission.	Number of Lectures in											
		English.		Mathematics.		Physics.		Chemistry.		Optional Subject (1).		Optional Subject (2).	
		Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).	Delivered (*a*).	Attended (*b*).

Principal.

* The number of lectures delivered and attended in each College must be separately stated.

(1) & (2) The subject must be named—

(*a*) If a student has attended only one College during the two years of study required by the Regulations, this column must show the total number of lectures delivered in the College during the two years, the lectures in each year being counted from the date on which the College opened after the summer vacation, and not from the date on which the student was admitted.

If a student has attended more than one College during the two years, the lectures in the College first attended must be counted from the beginning of the Session to the date on which a Transfer Certificate is given; in the College or Colleges subsequently attended, the lectures must be counted from the date of the Transfer Certificate, on which the student is admitted, to the date on which a fresh Transfer Certificate is given, or to the date of application for admission to the B.Sc. Examination.

(*a*) This number must not include any lectures attended before the receipt of the Transfer Certificate.

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M.A. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing examination for the degree of Master of Arts in*

The fee† of Rupees 50 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that the above-named candidate has satisfied me by the production of his diploma that he has passed the Bachelor of Arts or Bachelor of Science Examination of the University of Calcutta; that I know nothing against his moral character; and that I believe the subjoined account to be true.

This certificate is to be signed in the case of students of affiliated‡ Institutions by the Principal of the Institution in which the candidate has studied, and in the case of other candidates by a Member of the Senate or a Government Inspector of Schools, or the Principal or Head Master of an affiliated Institution.

The 19 .}

Particulars to be filled in by the Candidate—

Age.
Date of entrance.
Date of Graduation in Arts or Science.
Race (i.e., *nation, tribe, &c., &c.*)
Religion.
Whether he is a candidate for the Government Scholarship tenable in England.

Period or periods of study since passing the B.A. or B.Sc. Examination.

Affiliated Institution or Institutions, if any, at which the candidate has studied.	Period or periods of continuous study.	Signature of Principal or Head Master of affiliated Institution.

* In a subject in which there are alternative groups or subdivisions the candidate must specify the alternative group or subdivision in which he desires to be examined.

† The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

‡ No candidate shall be regarded as a student of an affiliated Institution, unless he has been a student of such Institution for a period of six months, and has attended a course of at least fifty lectures in the subject in which he desires to be examined.

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BACHELOR IN LAW.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing examination for the degree of Bachelor in Law.

The fee* of Rupees 30 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 2 of the Regulations as to Bachelor in Law, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the College at which the candidate has studied.

The 19 .

Particulars to be filled in by the Candidate—

Age.
Date of graduation.
Present occupation.
Religion.

---

* The fee must be paid in Cash, or by a Treasury Draft or Post Office Order. Postage stamps will not be received.

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Particulars to be filled in by the Principal.

* College or Colleges attended during the two years.	Date of Admission.	NUMBER OF LECTURES IN															
		1. The Principles of Jurisprudence, the History and Constitution of the Courts of Law and Legislative Authorities in India.		2. The Law relating to persons in their Public and Private Capacities, including the Law of Testamentary Succession.		3. The Law of Property, including the Law relating to Land Tenures and Revenue Laws.		4. The Law of Property, including the Law of Transfer, Prescription and Pre-emption.		5. The Law of Contracts and Torts.		6. The Law of Crimes and Criminal Procedure.		7. The Law of Civil Procedure, including the Law of Evidence and Law of Limitation.		8. The Hindu Law and the Mahomedan Law (with the exception of parts already included) and the Law of Intestate Succession.	
		Delivered (*b*).	Attended (*a*).	Delivered (*b*).	Attended (*a*).	Delivered (*b*).	Attended (*a*).	Delivered (*b*).	Attended (*a*).	Delivered (*b*).	Attended (*a*).	Delivered (*b*).	Attended (*a*)	Delivered (*b*).	Attended (*a*)	Delivered (*b*)	Attended (*a*).

Principal.

* The number of lectures delivered and attended in each College must be separately stated.

(*a*) This number must not include any lectures attended before the receipt of the Transfer Certificate.

(*b*) If a student has attended only one College during the two years of study required by the Regulations, this column must show the total number of lectures delivered in the College during the two years, the lectures in each year being counted from the date on which the College opened after the summer vacation and not from the date on which the student was admitted.

If a student has attended more than one College during two years, the lectures in the College first attended must be counted from the beginning of the Session to the date on which a Transfer Certificate is given; in the College or Colleges subsequently attended, the lectures must be counted from the date of the Transfer Certificate on which the student is admitted to the date on which a fresh Transfer Certificate is given or to the date of application for admission to the B.L. Examination.

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DOCTOR IN LAW.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request to be admitted to the degree of Doctor in Law.
The fee* of Rupees 100 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 1 of the D.L. Regulations.

This certificate is to be signed by the President of the Faculty of Law.

The 19 .

LICENCE IN MEDICINE AND SURGERY.

PRELIMINARY SCIENTIFIC EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Preliminary Scientific Examination for a Licence in Medicine and Surgery.
The fee* of Rupees 10 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 2 of the Regulations as to Medicine, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the College at which the candidate has studied.

The 19 . *Principal.*

Particulars to be filled in by the Candidate—

Age.
Date of passing the F.A. Examination.
Present occupation.

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* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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FIRST L.M.S. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing First Examination for a Licence in Medicine and Surgery.

The fee* of Rupees 15 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that ..... has fulfilled the requirements contemplated under paragraph 8 of the Regulations as to Medicine, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the College at which the candidate has studied.

The ..... 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.

Date of passing the Preliminary Scientific Examination.

Present occupation.

SECOND L.M.S. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Second Examination for a Licence in Medicine and Surgery.

The fee* of Rupees 25 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that ..... has fulfilled the requirements contemplated under paragraph 16 of the Regulations as to Licence in Medicine and Surgery, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the College at which the candidate has studied.

The ..... 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.

Date of passing the First L.M.S. Examination.

Present occupation.

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* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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BACHELOR IN MEDICINE.

PRELIMINARY SCIENTIFIC EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Preliminary Scientific Examination for the degree of Bachelor in Medicine.

The fee* of Rupees 10 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 2 of the Regulations as to Bachelor in Medicine, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the College at which the candidate has studied.

The 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.
Date of passing the F.A. Examination.
Present occupation.

FIRST M.B. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing First M.B. Examination.

The fee* of Rupees 15 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 8 of the Regulations as to Bachelor in Medicine, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the College at which the candidate has studied.

The 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.
Date of passing the Preliminary Scientific Examination.
Present occupation.

* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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SECOND M.B. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Second M.B. Examination.

The fee* of Rupees 30 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 13 of the Regulations as to Bachelor in Medicine, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the College at which the candidate has studied.

The 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.
Date of passing the First M.B. Examination.
Present occupation.

FIRST EXAMINATION IN ENGINEERING.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing First Examination in Engineering of the Calcutta University.

The fee* of Rupees 20 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that the above-named candidate has satisfied me, by the production of the Registrar's certificate, that he has passed the Entrance Examination of the University of Calcutta; that he has fulfilled the requirements contemplated under paragraph 2 of the Regulations, that I know nothing against his moral character, and that I believe the subjoined account to be true.

This certificate is to be signed by the Principal of an Institution affiliated in Engineering.

The 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.
Date of passing the Entrance Examination in Engineering.
Present occupation.
Whether he has appeared at the First Examination in Engineering of the previous year.
Religion.

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* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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L.E. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing examination for a Licence in Engineering.

The fee* of Rupees 25 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 2 of the Regulations as to Licence in Engineering, and that I know nothing against his moral character.

The certificate is to be signed by the Principal of the Engineering College at which the candidate has studied.

The 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.
Date of passing the First Examination in Engineering.
Whether he has appeared at the L.E. Examination of any previous year.
Present occupation.
Religion.
Optional subject or subjects.

B.E. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing examination for the degree of Bachelor in Engineering.

The fee* of Rupees 30 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that has fulfilled the requirements contemplated under paragraph 2 of the Regulations as to Bachelor in Engineering, and that I know nothing against his moral character.

This certificate is to be signed by the Principal of the Engineering College at which the candidate has studied.

The 19 . } *Principal.*

Particulars to be filled in by the Candidate—

Age.
Date of passing the First Examination in Arts.
Date of passing the First Examination in Enginering.
Whether he has appeared at the B.E. Examination of any previous year.
Present occupation.
Religion.
Optional subject or subjects.

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* The fee must be paid in Cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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MASTER IN ENGINEERING.

The certificate and application for the degree of Master in Engineering to be in the same form as for the degree of Doctor in Law, with the exception that the certificate is to be signed by the President of the Faculty of Engineering.

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(2) FORMS OF APPLICATION FOR ADMISSION OF FEMALE CANDIDATES.

ENTRANCE EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing Entrance Examination of the Calcutta University.

The Entrance fee* of Rupees 10 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that the above-named candidate has not already passed the Entrance Examination of the Calcutta University; that she has signed the above application in my presence; and that I believe the subjoined account to be true.

The certificate of every candidate who is not a private student, must be signed by the Principal or Head Master of the School from which she appears.

The certificate of a candidate who appears as a private student,† must be signed by the Principal of an affiliated College or Government Inspector of Schools or a Member of the Senate.

The

19 .}

Particulars to be filled in by the Candidate—

1. Name.
2. Religion.
3. Race (i.e., *nation, tribe, &c., &c.*)
4. Where educated.
5. Present position (i.e., *at school or present occupation.*)
6. Whether she has appeared at the Entrance Examination of any previous year.

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* The fee must be paid in Cash or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

† A student who does not appear from any school, or who has been transferred since the first of September next preceding the examination, without the consent of an Inspector to the School from which she appears, will be treated as a private student. The Inspector's sanction shall not be considered sufficient, unless special grounds appear on the face of it.

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7. Town or village where resident.
8. Name of father or guardian.
9. Where to be examined.*
10. Language in which, besides English, to be examined—

(*Second Language Morning Paper.*)

11. Vernacular language from and into which translation is to be made—†

(*a*) *English Afternoon Paper.*
(*b*) *Second Language Afternoon Paper.*

12. Whether she has taken up Drawing (optional subject).

FIRST EXAMINATION IN ARTS.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing First Examination in Arts of the Calcutta University.

The fee‡ of Rupees 20 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that the above-named candidate has satisfied me, by the production of the Registrar's certificate, that she has passed the Entrance Examination of the University of Calcutta; and that I believe the subjoined account to be true.

The certificate is to be signed by the Principal or Head Master of an affiliated Institution or a Member of the Senate.

The 19 .

Particulars to be filled in by the Candidate—

Date of entrance.
Race (i.e., *nation, tribe, &c., &c.*)
Religion.
Where to be examined.
Whether she has appeared at the First Arts Examination of any previous year.
Language in which, besides English, to be examined.

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* The following places have been appointed for holding the examination :—

Akyab, Balasore, Bankura, Barisal, Bassein, Berhampur, Bhagalpur, Burdwan, Calcutta, Chittagong, Cooch-Behar, Dacca, Darjeeling, Debrugarh, Gauhati, Hazaribagh, Hughli, Katak, Krishnagar, Mandalay, Maulmein, Midnapur, Pabna, Patna, Rampur-Baulia, Ranchi, Rangoon, Shillong, Silchar and Sylhet.

† Sub-head (*a*) is not to be filled up by candidates whose vernacular is English, and sub-head (*b*) need not be filled up by candidates taking up any of the following languages—

Greek, Latin, Hebrew, Armenian, French, or German.

‡ The fee must be paid in cash, or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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Name of the fifth compulsory subject.
Name of the optional subject, if any.
Alternative subject (*Physics and Chemistry or Botany.*)
Whether she intends to take up the optional paper in Original Composition, and if so, whether in Bengali, Hindi, Urdu, or Uriya.

Period or periods of study since passing the Entrance Examination.

Affiliated Institution or institutions, if any, at which the candidate has studied.	Period or periods of continuous study.	Signature of Principal or Head Master of affiliated Institution.

B.A. EXAMINATION.

APPLICATION.

To the Registrar of the Calcutta University.

SIR,

I request permission to present myself at the ensuing examination for the degree of Bachelor of Arts in the* Course.

The fee of† Rupees 30 is forwarded herewith.

I am, &c., &c.

CERTIFICATE.

I certify that the above-named candidate has satisfied me, by the production of the Registrar's certificate, that she has passed the First Examination in Arts of the University of Calcutta, and that I believe the subjoined account to be true.

This certificate is to be signed by the Principal or Head Master of an affiliated Institution or a Member of the Senate.

The 19 .

Particulars to be filled in by the Candidate—

Date of Entrance.
Date of passing the First Examination in Arts.
Race (i.e., *nation, tribe, &c., &c.*)
Religion.
Where to be examined.
Whether she has appeared at the B.A Examination of any previous year.
Whether she takes up the A Course or the B Course.
Whether she intends to take up the optional paper in Original Composition, and if so, whether in Bengali, Hindi, Urdu, or Uriya.

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* State whether in the A or the B Course.

† The fee must be paid in Cash or by a Treasury Draft, or Post Office Order. Postage stamps will not be received.

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Subjects in which she desires to be examined.

No.	Pass.	Honours.
1		
2		
3		

N.B.—(1) *It must be definitely shown whether the candidate takes up the Pass or the Honour Course in each subject by entering it in its appropriate column.*

(2) *It must be definitely stated which alternative subject and which alternative sub-division of each subject the candidate takes up.*

(*Thus* [*A Course*] 3. Second Language, Latin. *Or* 3. History of England, Greece, and Rome. *Or* [*B Course*] 3. Physiology and Botany.)

Period or periods of study since passing the F.A. Examination.

Affiliated Institution or Institutions, if any, at which the candidate has studied.	Period or periods of continuous study.	Signature of Principal or Head Master of affiliated Institution.

(3) FORMS OF CERTIFICATES OF PASSING.

Entrance.

I certify that aged duly passed the Entrance Examination held in the month of 19 , and was placed in the Division.*

University of Calcutta ;
The 19 .

Registrar.

* The words "He also passed the Optional Examination in Drawing" are to be included in the certificate of a candidate who has passed in Drawing.

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First Examination in Arts.

I certify that duly passed the First Examination in Arts held in the month of 19 , and was placed in the Division.

He (or she) also passed the Optional Examination in Original Composition in Bengali / Hindi / Urdu / Uriya.

University of Calcutta;
The 19 .

Registrar.

First Examination in Engineering.

I certify that duly passed the First Examination in Engineering held in the month of 19 , and was placed in the Division.

University of Calcutta;
The 19 .

Registrar.

Licence in Engineering.

This is to certify that passed the Examination for a Licence in Engineering at the Annual Examination in the year 19 , and that he was placed in the Division.

University of Calcutta;
The 19 .

Registrar.

Preliminary Scientific Examination for Licence in Medicine and Surgery.

This is to certify that duly passed the Preliminary Scientific Examination for a Licence in Medicine and Surgery at the Annual Examination in the year 19 .

University of Calcutta;
The 19 .

Registrar.

First Examination for Licence in Medicine and Surgery.

This is to certify that duly passed the first Examination for a Licence in Medicine and Surgery at the Annual Examination in the year 19 .

University of Calcutta;
The 19 .

Registrar.

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Second Examination for Licence in Medicine and Surgery.

This is to certify that having completed the curriculum of study and passed the examinations required by the Regulations of this University (sanctioned by the Governor-General of India in Council in accordance with the Act of Incorporation) for the Licence in Medicine and Surgery, is hereby declared competent and authorised to practise Medicine, Surgery, and Midwifery.

Dated at Calcutta, this day of 19 .

President of the Board of Examiners. *Vice-Chancellor.*

Registrar.

Signature of the Licentiate.

Preliminary Scientific Examination for the degree of M.B.

This is to certify that duly passed the Preliminary Scientific Examination for the degree of M.B. at the Annual Examination in the year 19 , and has been placed in the Division.

University of Calcutta;
The 19 . *Registrar.*

First M.B. Examination.

This is to certify that duly passed the First Examination for the degree of M.B. at the Annual Examination in the year 19 , and has been placed in the Division.

University of Calcutta;
The 19 . *Registrar.*

Second M.B. Examination.

This is to certify that having completed the curriculum of study and passed the examinations required by the Regulations of this University (sanctioned by the Governor-General of India in Council in accordance with the Act of Incorporation) for the degree of Bachelor in Medicine, which has been duly conferred upon him, is hereby declared competent and authorised to practise Medicine, Surgery, and Midwifery. was placed at the final examination in the Division.

Dated at Calcutta, this day of 19 .

President of the Board of Examiners.

Registrar. *Vice-Chancellor.*

Signature of the Graduate.

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Bachelor of Arts Pass Certificate.

This is to certify that obtained the degree of Bachelor of Arts in this University at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 . } *Chancellor* or *Vice-Chancellor.*

Bachelor of Arts Honour Certificate.

This is to certify that obtained the degree of Bachelor of Arts with Honours in this University at the Annual Examination in the year 19 , and that he was placed in the Division in .

University of Calcutta ;
The 19 . } *Chancellor* or *Vice-Chancellor.*

Bachelor of Arts Special Certificate in Original Composition.

This is to certify that duly passed the optional examination in Original Composition in Bengali / Urdu / Hindi / Uriya at the B.A. Examination held in the month of

University of Calcutta ;
The 19 . } *Registrar.*

Bachelor of Science Pass Certificate.

This is to certify that obtained the degree of Bachelor of Science in this University at the Annual Examination in the year 19 .

University of Calcutta ;
The 19 . } *Chancellor* or *Vice-Chancellor.*

Bachelor of Science Honour Certificate.

This is to certify that obtained the degree of Bachelor of Science with Honours in this University at the Annual Examination in the year 19 , and that he was placed in the Division in and in the Division in

University of Calcutta ;
The 19 . } *Chancellor* or *Vice-Chancellor.*

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Bachelor in the other Faculties.

This is to certify that obtained the degree of Bachelor in in this University at the Annual Examination in the year 19 , and that he was placed in the Division.

University of Calcutta;
The 19 .

Chancellor
or *Vice-Chancellor.*

Honours.

This is to certify that passed the Honour Examination in in the year 19 .

University of Calcutta;
The 19 .

Registrar.

Doctor or Master in any Faculty.

This is to certify that obtained the degree of Doctor or Master in in this University at the Annual Examination in the year 19 .

University of Calcutta;
The 19 .

Chancellor
or *Vice-Chancellor.*

Master of Arts.

This is to certify that obtained the degree of Master of Arts in this University at the Annual Examination in the year 19 , the special branch in which he was examined having been , and that he was placed in the class.

University of Calcutta;
The 19 .

Chancellor
or *Vice-Chancellor.*

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